

# PULP & PAPER

What Is Needed to Improve Latin  
American Trade see page 52

How Integrated Union Bag Mill  
Is Building up South see page 60

How Oxford Paper Co. Upgraded  
Its Hardwood Pulp see page 72



WORLD'S LARGEST PAPER MILL is this giant establishment of  
Union Bag & Paper Corp., on Savannah River above Savannah, Ga.



**The difference is  
High Efficiency in  
Acid and Alkaline Stocks  
with CYRON\* Chemical Size**

—and another important difference: no rosin, alum or wax is required when you use CYRON!

You'll find CYRON an excellent all-round sizing agent suited to a variety of mill conditions and requirements.

**CYRON** imparts excellent acid and alkaline resistance to papers.

**CYRON** imparts water resistance and outstanding ink resistance when added at the beater or by surface applications.

**CYRON** imparts superior coating properties to coating raw stock.

**CYRON** is simple to apply, requires no special equipment.

Your Cyanamid Technical Representative will be glad to make recommendations for the specific role which CYRON can fill in your operations.

THE WIDEST LINE OF PAPER CHEMICALS to serve paper industry needs is offered by Cyanamid, and is backed by the services of technically trained men with years of practical mill experience.

**Recent Mill Developments With  
Cyanamid Paper Chemicals . . .**

**Rosin size evaluation studies** indicate that comparisons between sizes must be made over a range of applications. For example, in comparing the sizing efficiency of two sizes, the one that is best in a lightly sized sheet may be surpassed by the other in a more heavily sized sheet.

\* \* \*

**Reduced bleeding of colored papers** has been reported by a western mill which recently switched to PAREZ® Resin 607 (MELOSTRENGTH\* Resin). The previously used urea resins did not have this effect.

\* \* \*

**"35% less rosin size needed"**

—That's what a mid-continent mill said when switching from ordinary rosin size to CYRON® Fortified Size. "Even with this reduction we got a higher degree of sizing in many of our grades."

\* \* \*

**Lactic acid test upped 15-30%** by the use of ALWAX® 251-F Wax Size. An eastern mill achieved this by adding only 0.3% of ALWAX 251-F to the filler plies of an 18-point double patent coated board.

\*Trade-mark



**AMERICAN Cyanamid COMPANY**

PAPER CHEMICALS DEPARTMENT

30 Rockefeller Plaza, New York 20, N. Y.

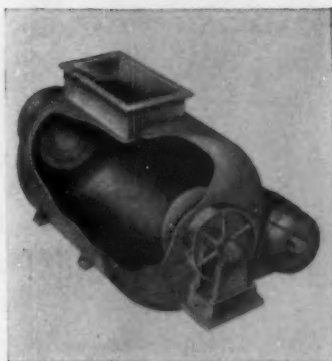
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# FOR STOCK PREPARATION

## Rice Barton Dyno Machines

The DynoPulper



These machines are used in preparing stock ahead of paper machines, in the elimination of beaters for working up broke, waste papers, de-inking systems and for the preparation of pulp. Completely separate fibres without cutting or shortening and with little or no appreciable drop in freeness. For heavy production — the QuatroPulper — for medium volume — the DynoPulper.

**DynoPulper**—made in 3 sizes for 500 to 1500 lbs. per charge at 4% consistency. Processes material at a consistency from 3 to 6%. Completely separates fibres without cutting or shortening.

**QuatroPulper**—for 2000 to 6000 lbs. per charge.

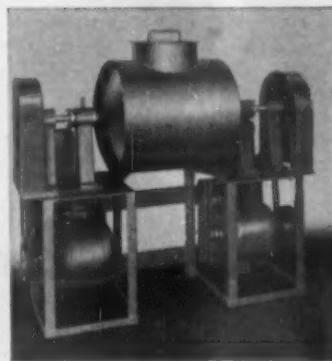
**DynoFiner**—for completing the process of de-fibering slush pulp on a continuous basis at the rate of 100 tons per day.

**Pilot Model** — for semi-commercial operation.

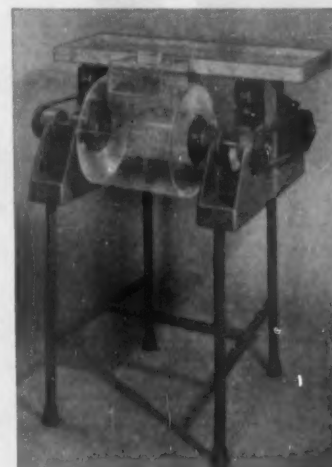
**Lab Model**—for laboratory work.

**Dump Valves**—from 4" to 14", designed especially for use with Dyno machines. No pockets on top—passages of valve are clear, smooth and unobstructed. Made up in cast-iron, bronze or stainless steel.

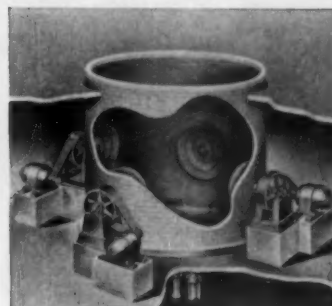
Pilot Model DynoPulper



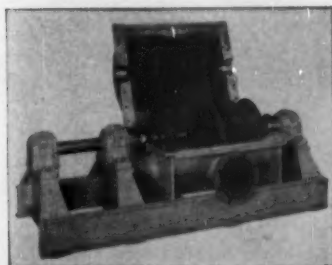
Lab Model DynoPulper



The QuatroPulper



The DynoFiner

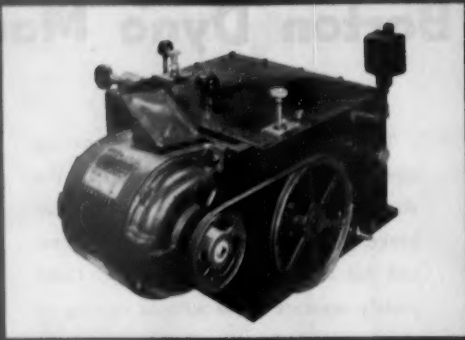


Dump Valves

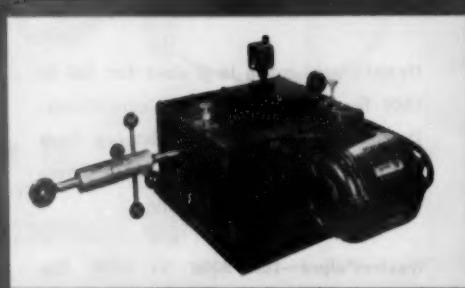


RBR 9-54

**RICE BARTON**  
*Research Corporation*  
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Install a Ross-Midwest-Fulton HYDROSCILLATOR on your Rewinder



To eliminate wrinkles in your mill rolls, regardless of size.

To eliminate hard and soft spots in your rolls.

To eliminate customer complaints because of wrinkles and hard and soft spots in your rolls.

Ross-Midwest Hydrosillators are hydraulically operated—can be set to deliver strokes of from  $\frac{1}{8}$ " to  $3\frac{1}{4}$ " as required. Oscillation speed from 0" to 24" per minute. Thrust up to 11,000#.

In short, a Ross-Midwest Hydrosillator on your Rewinder will soon return its cost and, with very little maintenance, serve for many years thereafter.

Very little floor space required. Unconditionally guaranteed. Write for Bulletin No. 101.



ROSS  
MIDWEST  
FULTON Corp., DAYTON, OHIO

# PULP & PAPER

Production and Management  
Magazine of the Industry

September, 1954  
Vol. 28—No. 10

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PULP & PAPER — September 1954

## COMMENT

### We're Sorry—A Correction—

For users of our 1954 WORLD REVIEW NUMBER, recently published:

We suggest you turn to page 112, and in the table on Red World Paper Production, change the figure for Red China from 40,000 to 400,000 tons.

We are sorry about this. Anyone who noted the table did not "add" without such a correction, and noted that 400,000 tons is mentioned in the accompanying story (p. 110), and also in the section on Red China (p. 172), could have easily "caught" the error.

We are proud that, otherwise, the accuracy of the entire 234-page volume, with 197 different tables of statistics from 44 countries, is up to PULP & PAPER's high standards. We ought to mention, it is illustrated with 75 pictures from all around the world.

(It is yours for a \$3 yearly or \$5 two-year subscription—just mention that you want it).

### The Dilemma of Where to Get Pulp

*Unasylva*, publication of the FAO of the United Nations, says paper requirements of Latin America, the Far East, Near and Middle East, Africa and Oceania are expected to increase in 10 years by 4,000,000 tons. It states they now consume 4% million tons, half of it imported from Europe and North America, and that another half million tons of pulp is imported.

Pulp and paper mills, now being built or planned in those regions, says *Unasylva*, will supply little more than half of the increased demand.

It, therefore, concludes: "The rate at which consumption can increase in the next few will be determined not so much by the extent to which increased imports can be obtained, as by the pace at which domestic production rises."

PULP & PAPER, in its WORLD REVIEW NUMBER, which was published July 25 (and incidentally carries latest information and statistics on those regions), contends the situation is not so hopeless as pictured—that imports can supply a large portion of the needs.

To augment the domestic increase of supply, why not use the woodpulp now available from the Northern Hemisphere? Build paper mills and other converting plants in those tropical and semi-tropical countries, and import some of the woodpulp required. Harold Stassen's Foreign Operations Administration is reported studying a plan to offer tax concessions to American capital invested in mills in Latin America, Asia, etc.

Expanded North American market pulp industries, as well as Scandinavia, stand ready to supply the pulp that would be needed and only the converting mills, in many cases, would be necessary. Pulp is only a semi-manufactured commodity, so the importer can increase its economic value by making paper products, and thereby may get dollars to buy pulp.

Trade both directions would be stimulated and even a stronger pulp industry would be built in the Free World's real fortress—North America. Pulp is a major defense need to fire guns, etc. The "defense mills" would be in safer areas.

Only North America, after all, can meet any really big increase in world demand for pulp now. Eventually, when a possible real peace would make investment abroad safer, when those markets would be big enough to justify costly pulp mills, when "know-how" for building and operation is developed, the picture may change. In the next few years, the most practical sources of pulp are existing Northern Hemisphere mills.





# NATURE

## *sows the seed*

Natural reforestation on Weyerhaeuser Timber Lands is achieved with seed supplied from blocks of trees reserved during logging and left standing to re-seed the adjacent cut-over area. This is a basic principle of Tree Farming.

Weyerhaeuser forest lands, consisting of eleven Tree Farms, are *cultivated* scientifically and intensively in line with the best possible forestry practices. Reforestation keeps pace with harvesting. Re-seeding of cut-over land *now* assures a timber crop that is sufficient and continuous.

Researchers are each day finding new uses for woodpulp. A full supply from Weyerhaeuser Tree Farms will *always* be available as a result of planned timber crops and a helping hand from Weyerhaeuser foresters.





Each incoming shipment matches your current inventory  
—when you standardize on Hooker caustic soda.

## Keep your process "on the beam" with UNIFORM Hooker Caustic Soda

Give your process this extra safeguard, at no extra cost. Buy Hooker caustic soda for the *uniformity* it gives you.

Hooker uniformity can be your key to a smoother-running operation. It lets you keep methods constant, with consistent results. Carload after carload, month after month, Hooker caustic soda is the

same—always what you expect it to be.

*Why you're protected*—Every step in the manufacture of Hooker caustic—from salt brine to tank car—is controlled by Hooker. More than 20 inspections and analyses safeguard the uniformity of every drum, every carload, every barge load you buy.

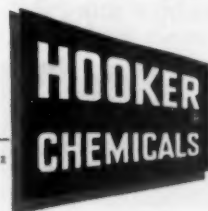
This is why leaders in 30 industries specify Hooker caustic soda—and why many have specified it for nearly 50 years.

Hooker uniformity can pay off for you, too—in smoother, better processing. Try it and see. A letter or phone call to the nearest Hooker office will bring you product data and contract information.

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Please send ☐ data sheets on Hooker caustic soda; ☐ Bulletin 100 describing Hooker products and services.

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4-1102

**in water treatment problems...**

*you won't find identical twins*



No two water treatment problems are exactly alike. The right solution to each can only be arrived at after a careful study of the local conditions. Variables such as raw water composition, rate of flow and results required automatically rule out the cure-all approach. The installation shown below is a good example of how equipment should be selected to fit the job... and not vice versa.



## **At St. Helens Pulp & Paper Company**

***Fluctuating feed characteristics and changing process needs  
require conventional treatment in combination units***

Clear, process water for production of bleach pulp has been a serious problem at the St. Helens Pulp & Paper Company mill at St. Helens, Oregon. Raw water characteristics fluctuate widely because of the tidal action of the Pacific, and the presence of some wastes in the Willamette and Columbia Rivers which join just below the plant. Feed volume fluctuates too — because of changing process needs.

In 1952, water analysis showed 14 to 68 ppm total hardness, 20 to 200 ppm turbidity and 20 to

50 ppm color. The two 120' dia. Dorco Clari-floculators shown above were specified to produce 20 MGD of finished water containing no more than 5 ppm color and 5 ppm hardness. Combination units, operating at conventional rates of flow — ideally suited for the changing conditions at St. Helens.

For more information on the complete line of Dorr water treatment units, write for Bulletin No. 9141 to The Dorr Company, Stamford, Conn; in Canada, 26 St. Clair Avenue East, Toronto 5.

*Every day, nearly 8 billion gallons of water are treated in Dorr equipment.*



*Better tools TODAY to meet tomorrow's demand*

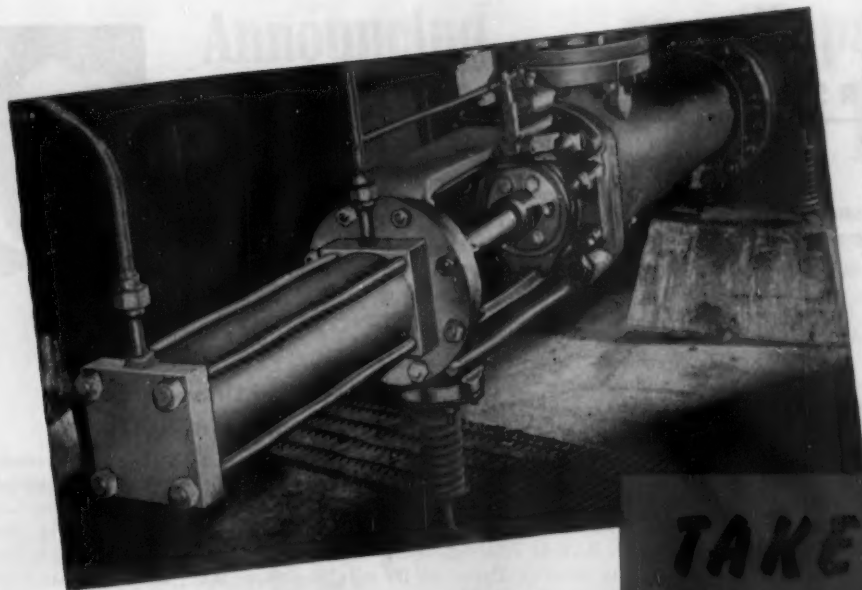
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**WORLD - WIDE RESEARCH • ENGINEERING • EQUIPMENT**

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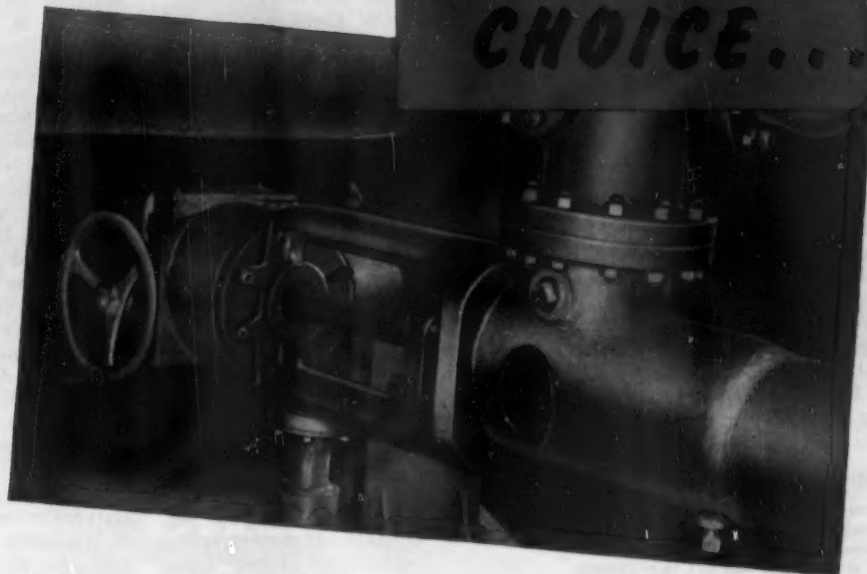
## HYDRAULIC- OPERATED

Yarway Digester Blow Valve—one of six installed at large North Carolina paper mill.

**TAKE YOUR  
CHOICE...**

## MOTOR- OPERATED

Yarway Digester Blow Valve—one of eight installed at large Canadian paper mill.



You can choose between hydraulic-operation and motor-operation when you specify Yarway Digester Blow Valves. Both combine all the following Yarway advantages:

- ▶ Remote control, usually from above, on the operating floor.
- ▶ Tight shut-off. Effective sealing under full digester pressure. Saves cooking liquor. Insures thorough pulp cooking.
- ▶ Free discharge. No pockets. Full discharge with minimum pressure drop. Digester blows clean.

▶ Rugged construction. Built to withstand shock and wear of toughest service.

▶ Modern metallurgy—such as sliding plunger of hardened stainless steel and sleeve of chromium nickel—resists wear and chemical action.

For full details, write for Yarway Bulletin B-440.

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## DIGESTER BLOW VALVES

### MIDWEST NEWS

#### Jim Whelan Has Anniversary Russ Johnson Grandpa Again

**JAMES T. WHELAN**, chief engineer for Kimberly-Clark, recently passed his 30th anniversary with the firm.

**RUSS JOHNSON**, assistant chief engineer for Kimberly-Clark, and his wife are grandparents for the second time. The new arrival is David Leon Cox.

**BEN CANCELL**, the new president of Rhinelander Paper Co., made a mark in Washington, D.C., in World War II as Forest Products Bureau chief, spearheading a desperate nationwide drive for essential pulpwood needed for war materials.

**J. H. FENNEMA**, new treasurer of Rhinelander, succeeded **E. S. HOULEHAN**, retired.

**W. H. GRAEBNER**, only recently made production manager of all pulp and paper mills of Marathon Corp., died July 27. He was only 49. For 27 years with Marathon, starting in Rothschild as a chemist. He moved to Menasha, Wis., where he headed technical services, then managed Menasha plants, later regional plants and was chief mill manager.

**JOHN M. JOHNSON**, tour foreman on Paper Machines 2 at Kalamazoo Vegetable Parchment Co., has worked for KVP in almost every department, starting in 1925. He is well advised with his wife and three daughters.

#### KINDIG HEADS MICH. DIVISION

**HARRISON KINDIG**, Personnel Mgr. of Mac-SimBar Paper Co. (second from left), was elected new Chairman of Michigan Superintendents at their July outing. L to r: **CLAUDE BOS**, Coating Supt. at St. Regis Paper Co., Kalamazoo, new First Vice Chairman; **MR. KINDIG**; **MARSHALL RUTZ**, KVP Co., 2nd Vice Chairman, and **MARTIN GALBRAITH**, Tech. Director, Sutherland Paper Co., new Secy.-Treas. of the Division.



**ALBERT WEBSTER**, assistant purchasing agent at KVP, came there the day after he graduated from high school in 1929, starting in the pipe gang, later working as paper tester, in stores and accounting. He has been in purchasing three years.

**ARTHUR CARLE**, safety director at The Northwest Paper Co., Cloquet, Minn., and his wife, Marie, recently visited Southern mills. He is general chairman of the National Safety Council's pulp and paper division.

**ERVIN R. PURDY**, purchasing agent for John Strange Paper Co., Neenah, Wis., died suddenly recently in his Neenah home. Born at Whiting, Wis., he joined John Strange Paper at its old Stevens Point mill in 1917.

**J. D. JOHNSON**, Container Corp. of America, North Water St. plant, Chicago, is the new chairman of the Chicago Tappi section. **A. DRESH-FIELD**, engineer, is vice chairman; **J. R. LYONS**, Atlas Boxmakers Inc., Chicago, is secretary, and **R. D. CARTER**, Keyes Fibre Co., Hammond, Ind. is treasurer.

**JOSEPH KOERNER** is sales representative, Carpenter Steel Co. Alloy Tube Div., 1516 W. Carroll St., Chicago, serving Lake States mills. He graduated from Columbia U. in 1950 and makes his home in Park Forest, Ill. **WALTER A. BAUMSTOK** is regional mgr. for Carpenter in Chicago. **LESTER TINCHER**, Champion mill, Hamilton, O., wage administration dept., won a University of Cincinnati scholarship for his record in its school of finance.

**PAUL A. MAHONEY**, former sales mgr. of International Paper Co., where he worked 23 years, has joined Minnesota & Ontario Paper as its v. p. in charge of sales. Born in Boston, he is 45. He was graduate cum laude of Boston College.

**ED E. DEN DOOVEN**, appointed new Mgr. of all Pulp and Paper Production for Marathon Corp.



#### Ed Den Dooven Heads Marathon Mills Output

Edward E. Den Dooven, a veteran of 26 years in this industry, has advanced to be manager of all production in Marathon Corp. pulp and paper mills. He moves from his native Green Bay, Wis., where he has been manager of Northern Paper Mills Division of Marathon, to Menasha, Wis.

His successor at Green Bay is John W. Bard, who has been staff assistant to Roy Sund, Marathon executive v. p. of mfg. Arnold Isaacson, from Northern, succeeds Mr. Bard.

Mr. Den Dooven was born in Green Bay and attended the U. of Wisconsin. He was former superintendent and manager of Northern for years before Marathon acquired it. Mr. Bard, an Iowa State graduate with doctor's degree from the Institute, was superintendent at Menasha. Rothschild, Ashland, Green Bay and Menasha, Wis., Menominee, Mich., and Oswego, N.Y., are mills under Mr. Den Dooven's supervision.

**G. G. MILLER**, Marathon traffic mgr. for rates, was elected chairman of Wisconsin Paper Traffic Conference. **H. D. WAKE**, Consolidated W.P.&P., was elected vice chairman and **F. E. SCHEUPPERT**, Rhinelander, secy.-treas.

**EARLE E. METCALF** heads up a new production control system as supervisor for Gardner Board & Carton. Born in Battle Creek, Mich., he has been with Gardner since 1930. **DARYL G. SEVERIN** is new asst. coordinator of personnel development for Gardner; **RUSSELL L. SMITH** has been named project engineer at Middletown, O., and **HENRY ALFORD**, instrument engineer.

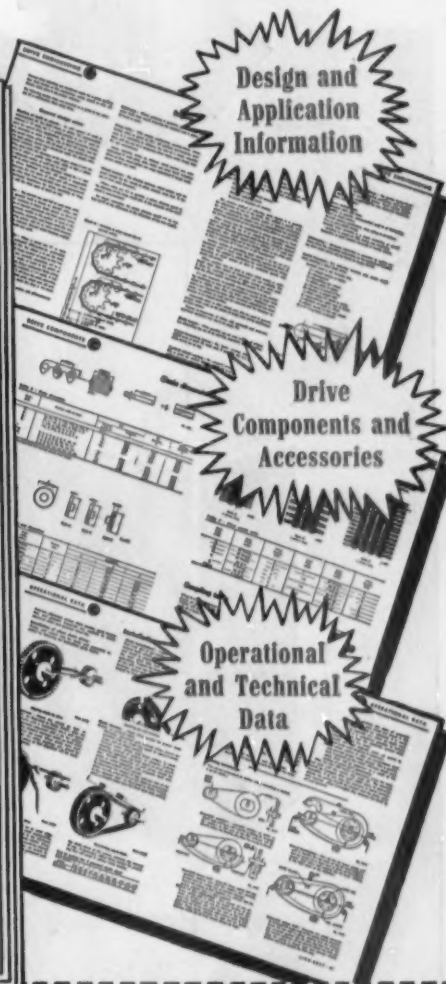
**HAROLD H. HELM**, president of Chemical Bank & Trust, New York, and **SIDNEY J. WEINBERG**, partner in Goldman, Sachs & Co., are new directors of Champion Paper & Fibre Co.

Continued on page 12

# Announcing . . . new 88-page SILENT CHAIN DATA BOOK

Here's a complete,  
easy-to-use guide to  
efficient drive selection

THIS comprehensive book covers all phases of industrial silent chain drive application. Complete information is included on drive selection . . . chain and wheel specifications . . . casings, lubrication, installation and maintenance. Illustrated are the wide range of drive applications on which Link-Belt Silverstreak Silent Chain can save you money.



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SILVERSTREAK SILENT CHAIN DRIVES

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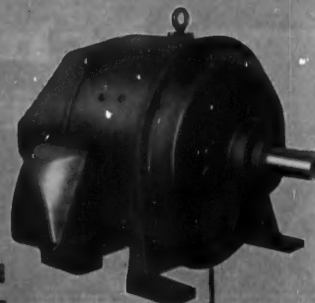
Operator's  
Control Station



Control Unit



Adjustable-Speed  
Drive Motor



# PRODUCTION OUTPUT IN EVERY INDUSTRY

## *moving things faster...more accurately!*

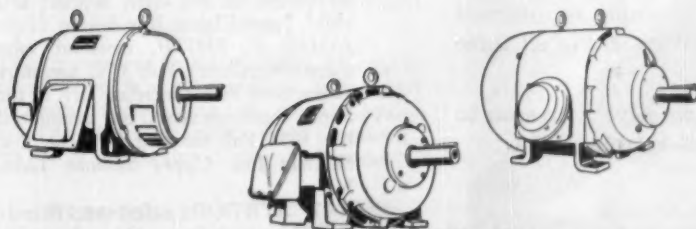
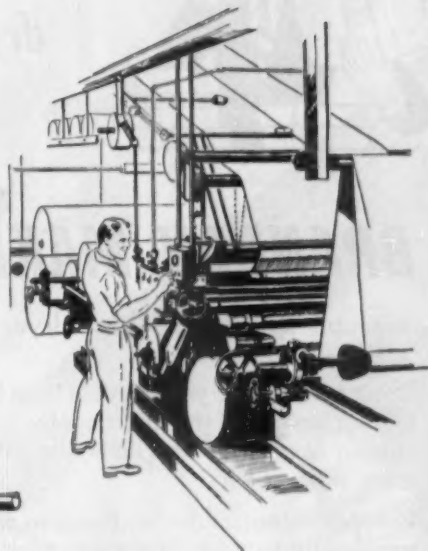
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## PULP & PAPER

### PERSONALS — Continued

#### NORTHEAST NEWS

##### New W. Va. Wood Procurer; Yale Gets Forestry Prof

**STANLEY W. HAMILTON** is new manager of wood procurement at West Virginia Pulp & Paper Co.'s Mechanicville mill. He was formerly assistant to **STARRETT D. HUFF**, who died suddenly on July 14. **IRVING B. PURDY** has been elected vice president of Merritt-Chapman & Scott Corp. and will be responsible

for administration of their industrial and building construction div. **EDWIN A. PASHA**, divisional vice president will be responsible for operations in the field.

**JOHN P. SAWYER** has been appointed assistant sales manager of International Paper Co.'s fine paper and bleached board div. He replaces **P. A. MAHONEY**, who has joined M. & O. Paper Co. as vice pres. for sales.

**FRANK C. ARNOLD** has joined Downingtown Mfg. Co. as sales engineer for finishing machinery.



## NOW!

**you don't have  
to guess about  
dryer felts**

## BRANDON MAKES ALL 3

So we can specify the best dryer felt for your needs

Don't guess at a dryer felt, then hope it's right. Be positive of your dryer felt the first time by obtaining an unbiased opinion from those who know the advantages of all three types of dryer felts.

Brandon manufactures all three, so we have no reason to specify any but the correct dryer felt for your plant.

For immediate attention  
to your dryer felt problems, write:

Brandon Sales, Inc.  
Drawer L, Branwood Station  
Greenville, South Carolina

Representatives:  
Northern and New England States  
Orton Corporation, Fitchburg, Mass.  
Midwestern States  
Frank Clawson, Kalamazoo, Mich.  
West Coast  
M. J. Maguire, Portland, Oregon  
Southern States  
R. S. (Bob) Davis, Greenville, S.C.

# BRANDON

## DRYER FELTS



##### PETE BARTHEL PROMOTED; KUMLER A CONSULTANT

**J. C. (Pete) BARTHEL** (left), has been promoted to Technical Director of American Cyanamid Co.'s Paper Chemicals Dept., New York City. A graduate of Syracuse, 1933, with a pulp and paper b.s. degree, he was with the Institute in Appleton before joining Cyanamid in 1937. Has been Asst. Tech. Director in charge of new products since 1952. He and his wife, Esther, are widely known.

**RALPH W. KUMLER** (right), who recently retired and is succeeded by Mr. Barthel, will continue to do consulting work on pulp and paper chemical problems for Foster D. Snell Inc., 29 W. 15th, New York, according to J. B. CALKIN, Asst. to the Pres. Mr. Kumler graduated from Wittenberg College, did graduate work at U. of Chicago and U. of Penn. He was Cyanamid's Technical Director for 10 years.

**ERNEST T. F. WOHLBERG** has been appointed to the newly created post of professor of industrial forestry at Yale U. School of Forestry. Mr. Wohlberg retires as vice president, Masonite Corp.

**RALPH K. BEHR** becomes manager of Babcock & Wilcox Co.'s Boston district office of their boiler div., replacing **H. K. DEAN**, who retires after 31 years with the company.

**"HARRY" KARABASHIAN**, chief electrician, Champion-International Co., Lawrence, Mass., and his wife Lois, were congratulated by fellow employees on the birth of their first child, Janet Elaine, July 5.

**JAMES E. SMITH**, assistant sales manager, Albany Felt Co., secretary of the New York-Canadian Div. of the Superintendents Assn., has announced the 1954 Fall meeting for Sept. 2-4, Saranac Inn, Upper Saranac Lake, N.Y.

**RAY ATWOOD**, salesman, Standard Lime and Stone Co., whose father, Charles Atwood, was mentioned previously in Oxford promotions, took a PULP & PAPER editor on a scenic trip through the Maine woods. Present on the trip were his father, Charles, Ray's wife Jean and **BILL SWAN**, sales manager, Standard Lime and Stone. Highlight of trip was breathtaking view overlooking Lake Mooselookmeguntic.

Continued on page 16



**WANT TO**

**INCREASE PRODUCTION AS MUCH AS 25% ?**

**LOWER PULPING COSTS ?**

**These are the facts!**

**Raise Production**—Faster and more thorough penetration cuts cooking time by 19% or more, with the same maximum temperatures and pressures, giving that much more production. In addition, the penetrating period with ammonia base is less critical.

**Reduce maintenance costs**—damage is considerably reduced because of the tremendous decrease in solid and insoluble materials passing through the system.

**Save up to 40 lbs. of sulphur per ton of pulp**—due to more efficient absorption of  $\text{SO}_2$  in ammonium bisulfite solution.

**Save the cost of labor and handling of limestone**—Anhydrous Ammonia unloads from tank cars under its own pressure piped to an automatic system. There is no waste at all and the cost of lime unloading is eliminated.

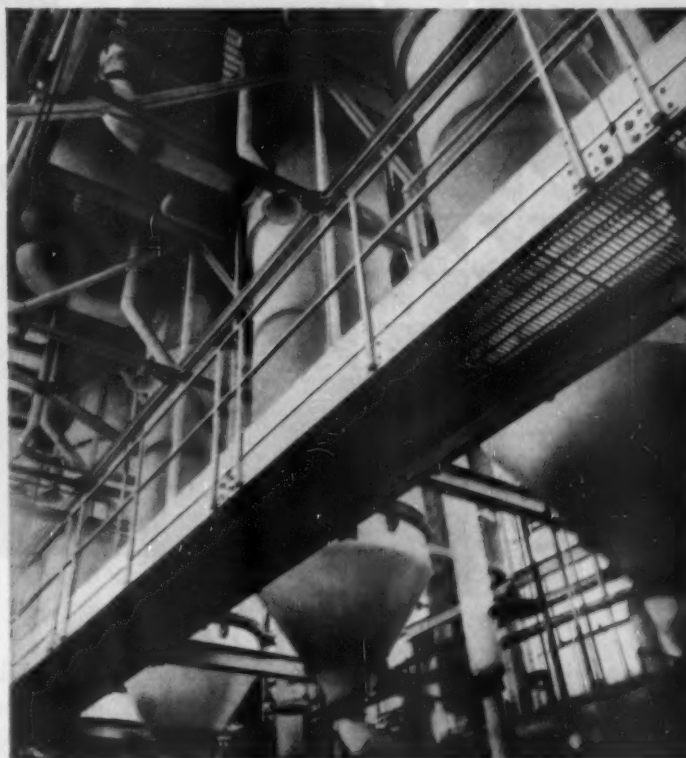
**Other big advantages:** you increase pulp quality, increase pulp yield, decrease percent screenings, increase equipment life, increase wood specie handles, eliminate scaling, evaporate waste liquors easily, reduce stream pollution to a minimum.

Leading mills have converted to the Ammonium Bisulphite Pulping Process because they found pulp production is increased while pulping costs go down.

The changeover to this Pulping Process is inexpensive. A minimum replacement—and in many cases, no replacement—of equipment is involved, and there is practically no loss of production during conversion.

**WRITE TODAY!**

- Send for full details on the Ammonium Bisulphite Pulping Process.
- Ask for a Technical Service man to call. No obligation!



**Anhydrous Ammonia**

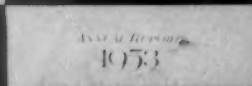
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ALLIED CHEMICAL & DYE CORPORATION  
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*...then switch to the  
Ammonium Bisulphite  
Pulping Process...  
pioneered by the  
Nitrogen Division*



Brown  
Company  
Pulps...

are basic  
to these  
fine papers



It's always important that annual reports make a good *visual* impression on stockholders. The ones you see here did—because they were produced on fine papers made by S. D. Warren Company with pulps engineered by Brown Company.

Specialty papers made with Brown Company Pulps provide the finest, clearest, most faithful reproduction possible—handsomely printed and illustrated annual reports, catalogs, brochures, all kinds of publications that your company can be proud of.

Our Technical Service Division has been supplying the *right* pulps for special papers for many years. If you have a paper problem of any kind, let us help you, too. Write Dept. CP-9, our Boston office.

**BROWN**

COMPANY, Berlin, New Hampshire  
CORPORATION, La Tuque, Quebec

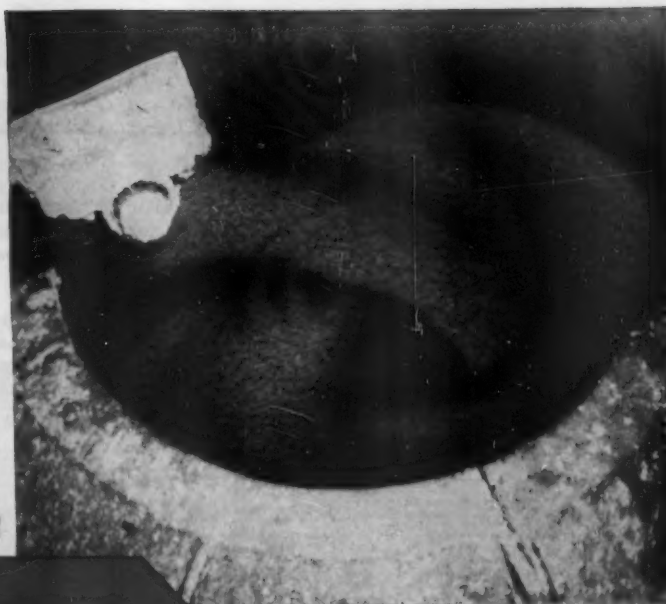
General Sales Offices: 150 Causeway Street, Boston 14, Mass.  
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CONDUIT • ONCO INSOLES • CHEMICALS

September 1954 — PULP & PAPER



**Less Horsepower  
per ton of  
pulp  
production**

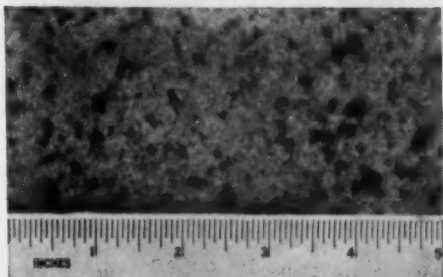


**the Downingtown**

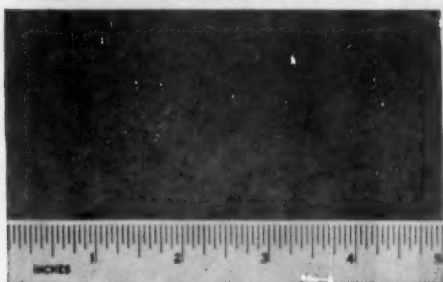
# Fibrepulper

**utilizes power**

**more efficiently . . . !**



*High wet strength government map paper after 30 minutes pulping in water 200°F. in Downingtown Fibrepulper.*



*Same paper after 90 minutes of pulping.*

Because of its shape and design, the Downingtown Fibrepulper increases the number of times the pulp is passed through the defibering area within a given interval of time. This results in a more thoroughly refined pulp and a consequent appreciable decrease in kilowatt hours required per ton of output. With the high pulping rate the size of the unit is smaller for a given tonnage output. This reduction in size results in space saving and installation cost.

Installations of the Downingtown Fibrepulper are helping mills conserve power, increase production and reduce costs. Our technical men are available to discuss pulping problems with you by appointment.

Write for Bulletin No. 554 which describes Downingtown Fibrepulpers in detail.

**DOWNINGTOWN MANUFACTURING CO., DOWNINGTOWN, PA.**

**REPRESENTATIVES:**

**United States**

John W. Bolton & Son, Lawrence, Mass.

John V. Roslund, Pacific Bldg., Portland 4, Oregon

**Canada**

Koehring-Waterous, Ltd., Brantford, Ontario

**Foreign**

U.S. Machinery Co. Inc., 90 Broad Street, New York 4, N.Y.



## DOWNINGTOWN

DESIGNERS AND BUILDERS OF PAPER  
BOARD AND FELT MACHINES SINCE 1880

MODERNIZATION

IS PROFITABLE



## PULP & PAPER

### PERSONALS

#### NORTHEAST NOTES

**HEINZ AHLMEYER** has been appointed assistant division manager at Gair Cartons, Piermont, N.Y., according to **NORMAN F. GREENWAY**, vice president in charge of folding operations. Mr. Ahlmeyer, graduate of Lage Lippe University, Germany, has been superintendent of plant maintenance at Piermont.

**EDGAR JADWIN**, secretary and assistant treasurer, Cameron Machine Co., Brooklyn, N.Y., has been elected to the company's board of director.

**ROBERT F. ELMIGER** has been appointed sales promotion manager of Carpenter Steel Co's Alloy Tube Div., and will also continue as market analyst for the Tube Div.



#### NEW REPS IN EAST

**RALPH K. BEHR** (left) becomes Manager of Boston district office of the Babcock & Wilcox Co.'s Boiler Div. replacing **H. K. DEAN**, who retires after 31 years with the company.

**GEORGE OLSON** (right), transferred to New York City from Kansas City by Spencer Chemical Co. Mr. Olson has been a pioneer in activities connected with the development of magnesia base pulping in the sulfite pulp industry.

#### SOUTHERN NEWS

##### New Engineers at Memphis And Coosa River Mills

**RUSS BAER** has joined the engineering staff of Coosa River Newsprint Co., Coosa Pines, Ala., and **PAUL ROBINSON** is new member of the engineering department at Kimberly-Clark's Memphis, Tenn., paper mill. Both hail from staff engineering at Kimberly-Clark headquarters, Neenah, Wis.

**E. P. (BUD) WILSON** has been appointed assistant chief chemist, Fernandina, Fla., division of Rayonier Inc. He is a graduate of Montana State College, served in the Forest Service in Montana and joined Rayonier at Shelton, Wash.

**LEE LOCK BELANGER**, a sorter at Champion Paper's Pasadena, Texas, mill decided to stay on the ground . . . she's a former airline stewardess.



... Basic Source of  
**SALT CAKE**  
for the World's Largest Kraft Producers

Like other important industries, the great Kraft paper mills of the Pacific Northwest look to the desert at Trona for essential chemicals — in this case, SALT CAKE of highest purity, for which we are their principal source of supply.

### American Potash & Chemical Corporation

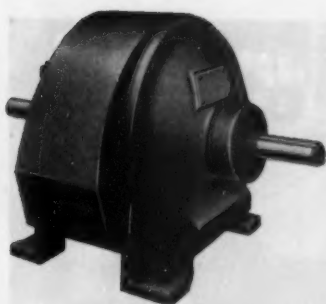
Offices • 3030 West Sixth Street, Los Angeles 54, California  
122 East 42nd Street, New York 17, New York  
Plants • Trona and Los Angeles, California



#### THEY ADVANCE IN MEAD

**EDWARD H. NIEDERAUER** (left), new Div. Mgr. of Kingsport, Tenn., mill; **GEORGE H. SHEETS** (middle), new Asst. Div. Mgr.; and **JOHN R. TAGGERT** (right), new Gen. Paper Mill Supt. Thus Mead fixes its top team for this important mill, where **GEORGE H. PRINGLE**, Vice Pres. for all White Paper Operations, was temporarily Gen. Mgr. also. He returns to Chillicothe, O.

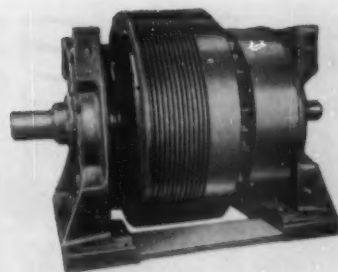
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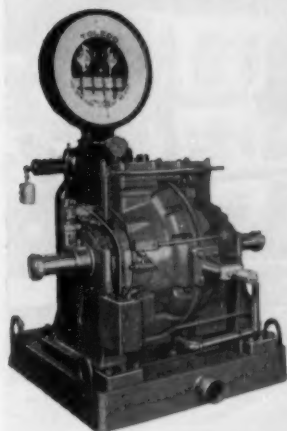
**AIR COOLED COUPLINGS**



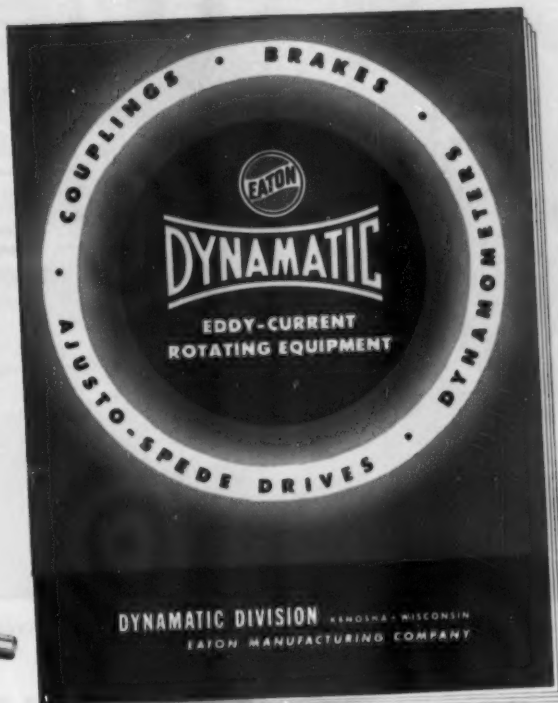
**AJUSTO-SPEDE MOTORS**



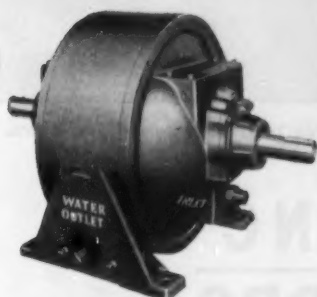
**PRESS DRIVES**



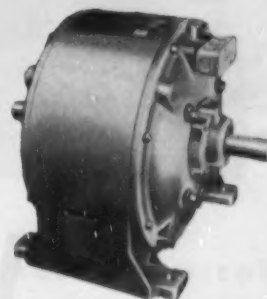
**DYNAMOMETERS**



**AIR COOLED BRAKES**



**LIQUID COOLED COUPLINGS**



**LIQUID COOLED BRAKES**

Our new booklet, "Bulletin GB2," describes and illustrates the basic Dynamatic Eddy-Current units, including the new Stationary Field Coupling. If you are interested in modern speed control, write for your copy.

## Speed Control Problems?

**One of these  
Dynamatic Units  
may be the solution**

Dynamatic Eddy-Current Couplings, brakes, clutches, Dynamometers, and Ajusto-Spede motors, in use today in practically every basic industry—in both plant equipment and end products—are proving the ideal solution to difficult speed control and testing problems. Advantages include rapid response, infinitely adjustable speed control, wide speed range, quiet operation, high full-load efficiency, low maintenance cost, adjustable speed from an AC power source. Write for your copy of the new Dynamatic Bulletin GB2 today.

**DYNAMATIC**

**DIVISION EATON MANUFACTURING COMPANY**

**KENOSHA, WISCONSIN • General Offices: Cleveland, Ohio**



Many of the popular magazines on American newsstands are made economically possible, in large part, by "Virginia" Zinc Hydro.

# "VIRGINIA" ZINC HYDRO

## Produces Bright Pulp at Low Cost

Brand new techniques for the reduction-bleaching of groundwood pulp with "Virginia" Zinc Hydro are piling up profits for pulp mills.

This powerful reducing agent does a comparable job at about one-half the cost of oxidizing bleaches.

Here are some of the actual results recently reported:

- "A 12-point brightness increase."
- "Per ton costs have never exceeded 60c per brightness-point."

- "We have saved as much as \$8 per ton."

- "Brightness permanence is equal to other bleaching."

The "Virginia" Zinc Hydro process with its economies in time and efficiency applies to the big and little mill alike. Almost no new equipment investment is needed; fewer chemical additives are required. Chemically, "Virginia" Zinc Hydro is stable in storage. It is free-flowing, non-clogging and non-corrosive.

A competent, experienced Virginia

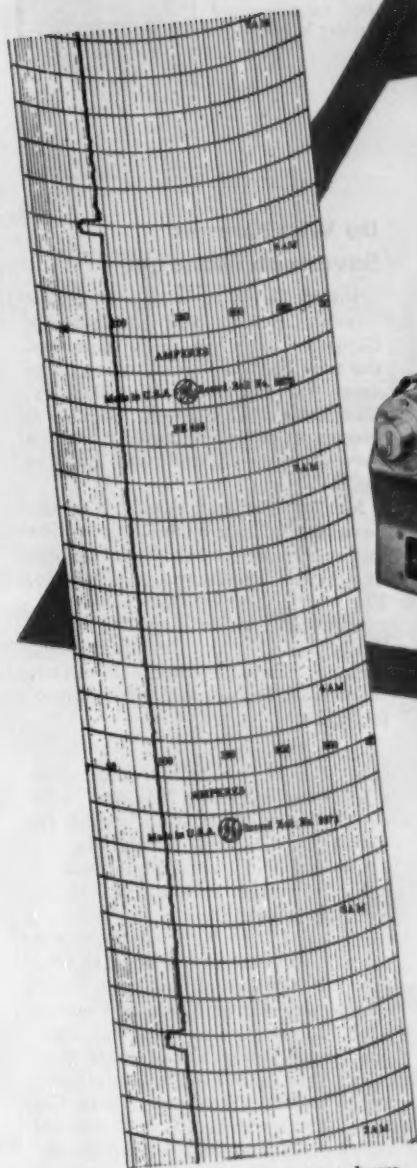
engineer will be glad to discuss these new developments at your plant—just tell us when you'd like to have him come. Industrial Department, VIRGINIA SMELTING COMPANY, Dept. 82, West Norfolk, Virginia.

**VIRGINIA**  
*Chemicals*

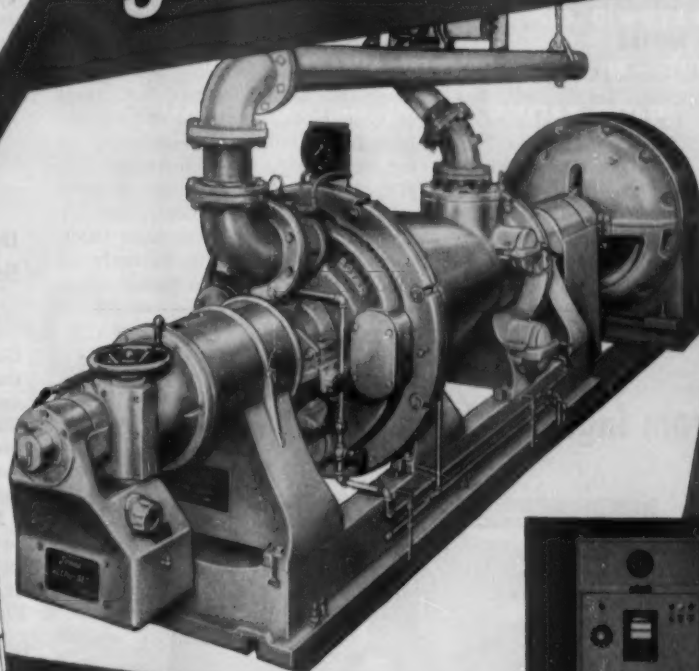
Field Offices: NEW YORK • BOSTON • DETROIT  
CHICAGO • ATLANTA • ASHEVILLE  
Available in Canada and many other countries



ANOTHER **E.D. Jones** INSTALLATION



This watt-meter chart shows uniformity of Jordan performance with Accru-Set Control.



Jones Royal Jordan (top) in Western Electric's Hawthorne Works, Chicago, has been operating under Accru-Set Control for a year. Inset shows typical control panel.



## **ACCRU-SET<sup>®</sup> Automatic Control** makes this Jordan walk a chalk-line

In mill after mill, Accru-Set has demonstrated its ability to maintain uniform performance at maximum efficiency — with a savings in operating horsepower — on every type of conical refining and Jordanning machine. Completely automatic control panel can be located anywhere; continuous record of every run permits exact duplication.

Ask your Jones representative for details or write today for our new Bulletin No. 1057.

**E.D. Jones**

E. D. JONES & SONS CO. • PITTSFIELD, MASS.

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY  
PULP & PAPER — September 1954

## PERSONALS — Continued

### SOUTHERN NOTES

**ED NIEDERAUER**, new manager of Mead's Kingsport, Tenn., mill, has served there four times and also at the Sylva, N.C., so he knows "his South." Ed is a Purdue graduate, 1929, and went to Kingsport two weeks after joining Mead in Chillicothe, O., right after graduating. He has been back there since January 1953, as production mgr.

**GEORGE GARRETT ARTHUR**, coordinator of supervisory and employee training and responsible for its organization at the Canton, N.C., mill of Champion Paper, has retired. He intends to follow his avocation of furniture design and construction.

**JOHN R. TAGGERT**, new general paper mill superintendent, also at Kingsport, has been there since 1950, coming from Chillicothe. Recently he was assistant production manager.

**PHILIP DE WITT**—  
Mgr. for Cameron &  
Barkley in Savannah,  
Ga.



### De Witt Named Savannah Manager

Philip De Witt, a native of East Orange, N. J., and graduate of Georgia Tech, has been appointed the new Savannah, Ga., office manager for Cameron & Barkley, Charleston, S.C. Rufus C. Barkley is president of this company, which serves many pulp and paper mills in the Southeast.

Mr. De Witt said that 50% of the Savannah office's business is in pulp and paper. Other branch offices are at Jacksonville, Tampa and Orlando, Fla.

Cameron & Barkley represents Saran Lined Pipe Co., Link-Belt, Simonds Saw & Steel, Manning, Maxwell & Moore, and other manufacturers.

**GEORGE HERMANN**, retired sales manager of Hermann Mfg. Co., who owns a motel "Ship Ahoy" which he operates at Daytona Beach, Fla., on South Atlantic Ave., underwent a hernia operation recently but is recovering nicely.

**C. L. SMITH**, National Container Corp., Jacksonville, announces the first fall meeting of Southern Tappi section will be at Valdosta Country Club, Valdosta, Ga., near his company's new mill on Oct. 1-2. On Nov. 12-13, they go to King & Prince hotel, famed resort on St. Simons Island, Ga.

**GEORGE H. SHEETS**, new assistant manager at Kingsport, was recently assistant to the division manager at Chillicothe, O., before going to Kingsport as assistant to **GEORGE PRINGLE**, v. p., who was temporarily general mgr. there. Born in Washington Court House, O., he graduated from Ohio State and the Institute in Appleton. He came to Mead in 1941.

**LEONARD C. MENIUS** has been named personnel manager at East Texas Pulp & Paper Co., Evadale, Texas, now in course of construction. Previously he served with industrial relations, Union Bag.

Continued on page 24

### "From ingot to fourdrinier wire"



#### QUALITY-CONTROL THROUGH THE LABORATORY

Shown here is a small section of our laboratory, which is housed in its own building and is completely equipped with the most modern instruments.

Its staff is dedicated to a two-fold purpose:

1. Quality control during every phase of fourdrinier wire manufacture.
2. Constant study, research and evaluation for future progress.

From the raw metals to your finished fourdrinier wires, we are proud to say they are truly ours—scientifically controlled from the ingot to the finished product.

**EASTWOOD-NEALEY CORPORATION**  
Belleville, N. J.

**PUGET PULP**—the *whitest, cleanest, bleached sulphite pulp* that we can make is produced *particularly for the market*. To assure converting mills of top quality, Puget management is always testing new processes, always alert to improved methods, always ready to install new designs in equipment. Gear your operations to **PUGET PULP**.



**PUGET SOUND**

**PULP AND TIMBER COMPANY**  
BELLINGHAM • WASHINGTON



# THE PROOF OF SIZE

## MILLS KNOW PEXOL GIVES MORE FOR THEIR DOLLAR THAN ANY OTHER FORTIFIED SIZE

There are many good reasons why Pexol outsells any other fortified size on the market. Not the least of these is Hercules' unequaled service facilities, which provide every Pexol user with the advantages of a product tailored to his needs. Hercules' technical representatives, trained for service to the paper making industry *exclusively*, are available to visit your plant, study your operating conditions, and recommend a Pexol formulation that will give optimum solubility, low foam index, and overall sizing efficiency. Such service is a Hercules "plus"—insures the most for your sizing dollar *in actual use!*

### FACTS ABOUT FOAM

There has been much comment about foam caused by rosin size. The simple fact is: **NO OTHER FORTIFIED SIZE HAS A LOWER FOAM INDEX THAN HERCULES PEXOL**, and at an equal degree of fortification no other size can even approach it.

### RESEARCH FACILITIES

The finest research facilities possible, devoted *exclusively* to paper making chemicals and their application, are available in helping you improve your product or processing methods. Trained technicians in the laboratory back up Hercules' technical representatives in the field—put at your disposal over forty years of experience in solving paper making problems.

### VARIETY

No one size, dry or paste, can possibly fit every requirement. That's why Pexol is available in both paste and dry forms, and in numerous types. Or, if your needs are unusual, Hercules will develop special modifications of existing formulations to meet specific conditions.

### ECONOMY

Pexol brings reductions in size furnish . . . often as high as 30 to 50%. That means lower inventories, reduced freight and handling cost. Yet sizing tests are maintained . . . often improved. In every way, Pexol is a balanced fortified size that gives the most of all desirable properties—the most for your sizing dollar!

### RESULTS

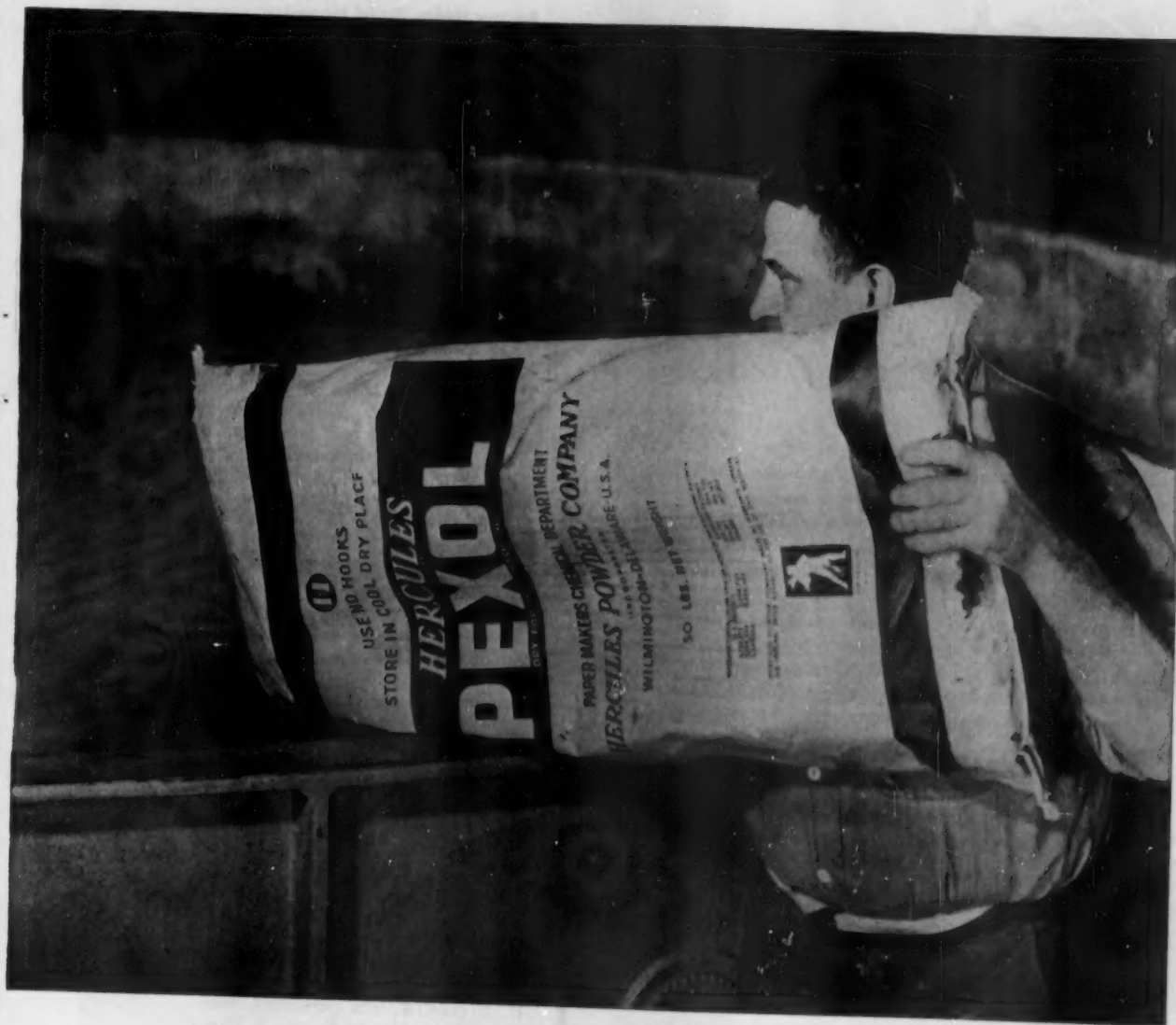
The final test of any size is how well it works for you. Pexol outsells all other fortified sizes. To maintain such a record, it *must* give results! If you're among the few who haven't yet tried Pexol, contact your Hercules technical representative. He'll be glad to demonstrate what you've been missing.

Paper Makers Chemical Department  
**HERCULES POWDER COMPANY**  
INCORPORATED  
965 King St., Wilmington 99, Delaware



**FOR OPTIMUM SOLUBILITY, LOW FOAM INDEX, AND SIZING EFFICIENCY . .**

# IS IN ITS USE...



... **HERCULES**

# PEXOL<sup>®</sup>

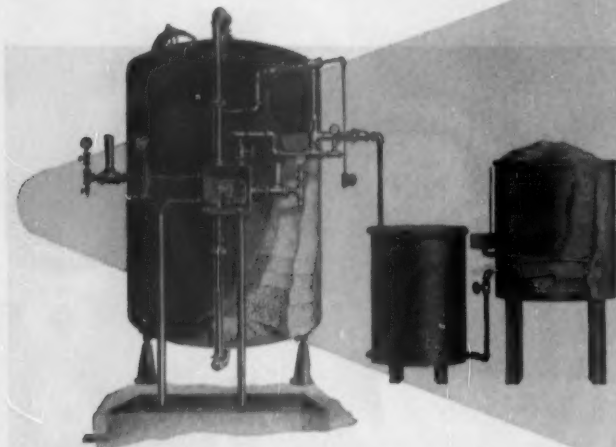
**FORTIFIED SIZE**

PULP & PAPER — September 1954

## HIGH EFFICIENCY

### Cochrane ZEOLITE SOFTENERS

provide easy, economical operation



The Cochrane Hydromatic Single Control Valve provides positive, accurate control of all phases of the softening and regenerating cycle.

It is so simple to operate that no technical knowledge of the softening process or the equipment is required. High quality effluent is thus assured at a minimum cost and maximum delivery.

Cochrane engineers and manufactures every type of precipitation and ion exchange water conditioning equipment, thus assuring you unbiased recommendations for equipment best suited to your requirements. Cochrane's complete service provides single responsibility for engineering, fabrication and continued satisfactory operation.

For complete details on Cochrane Zeolite Softeners, use the coupon below.

### Cochrane CORPORATION

3130, 17th STREET, PHILADELPHIA 32, PA.

Representatives in 30 principal cities in U.S.; Toronto, Canada; Mexico City, Mexico; Paris, France; Havana, Cuba; Caracas, Venezuela; San Juan, Puerto Rico; Honolulu, Hawaii.

Pittstown Metal Products Division—  
Custom built carbon steel, alloy and non-ferrous products.



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Send me a copy of Publication 4520-A on Zeolite Softeners.

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## PULP & PAPER

### PERSONALS

#### CANADIAN NEWS

##### Bailey Helps Build Hospital Soles is Now a V.P.

W. E. SOLES, director and general manager of Anglo-Canadian Pulp & Paper Mills, Quebec, has been elected a vice president. C. H. SMITH, formerly assistant treasurer and chief accountant, has been named treasurer, with W. G. D. STANLEY, assistant treasurer. H. D. RUTHMAN, secretary, has joined the board. ELLIOTT LITTLE is president.

J. W. WING, general manager and director of Gaspesia Sulphite Co., whose mill is at Chandler, Que., has been named vice president of that company, succeeding W. J. CLARKE. PAUL ROBITAILLE is treasurer, succeeding G. H. BRIDGE. J. R. LATTE, director of personnel, is now a member of the board.

LEN BAILEY, purchasing agent for KVP Ltd., Espanola, Ont., handled publicity for a drive for funds to pay for the new \$1,500,000 Espanola General Hospital. First patients were admitted this summer.

DR. RALPH PATTERSON, technical director of Powell River Co., has returned to the British Columbia paper town after spending two months in Europe visiting mills and manufacturers.

R. F. CALDWELL, secretary and treasurer of the E. B. Eddy Co., Hull, Que., and W. D. MOFFATT, director of sales, are new company directors. ERNIE CRANDALL, resident manager of Ontario & Minnesota's Kenora mill, served as a young man in the Canadian "Mounties" and became a gun fancier in those days. He has 117 pieces in his collection, for which he paid from \$3 to \$250. His favorite is a Belgian musket made in 1580.

R. J. ASKIN, vice president, manufacturing, Abitibi Power & Paper Co., Toronto, is new president of the Ontario Pulp & Paper Makers Safety Assn.

A. L. K. SWITZER, chief forester of LongLac Pulp & Paper Co., Terrace Bay, Ont., has been elected chairman of Northwestern Ontario branch of Ontario Safety Assn., succeeding G. K. EOLL, Marathon Paper Mills. Honorary chairman is Marathon's P. V. LeMAY, woods manager.

Continued on page 28





# BRIGHTNESS SELLS PAPER

## BLANCOPHOR® HS-71

**New, low cost, fluorescent  
optical bleaching agent for paper**

The new BLANCOPHOR HS-71 which shows exceptional solubility in water is recommended to improve visual brightness of white papers by coloring in the pulp, on the surface or in coating applications.

When applied to paper, BLANCOPHOR HS-71 yields brighter whites without the pinkish cast of the usual paper brighteners.

Papers colored with BLANCOPHOR HS-71 show excellent resistance to attack by acidic atmospheric gases by retaining their brightness.

*Write today for information on BLANCOPHOR HS-71.*

*From Research to Reality*



**ANTARA. CHEMICALS**

A SALES DIVISION OF GENERAL ANILINE & FILM CORPORATION

435 HUDSON STREET • NEW YORK 14, NEW YORK

SALES OFFICES: New York • Boston • Providence • Philadelphia • Charlotte • Chattanooga • Chicago

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# Mark of the Modern Mill . . .

process control

engineered and supplied

by **FOXBORO**

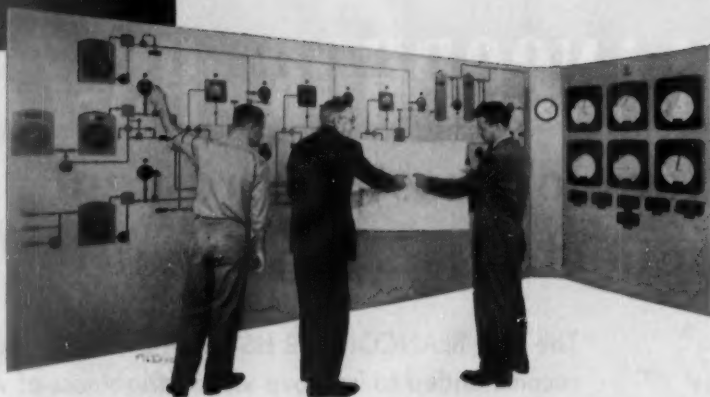


Why have the great majority of new and modernized mills turned to Foxboro to engineer and supply complete process control instrumentation?

The answer is the leadership which Foxboro has earned throughout the pulp and paper industry . . . leadership in knowledge of the industry's needs, in research, in application experience, in product quality and diversity . . . and in thoroughness of engineering.

In the laboratories and on the drawing boards at Foxboro, today, are tomorrow's control developments for the pulp and paper industry . . . developments that will continue the Foxboro tradition of originating new and better ways to cut production costs and improve product quality.

The Foxboro Company,  
999 Neponset Avenue  
Foxboro, Mass., U.S.A.

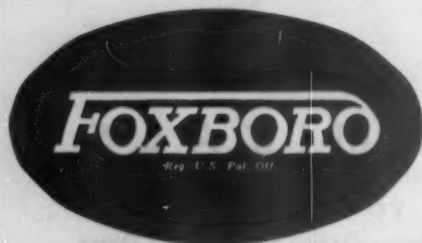


## Typical Mills with Foxboro Process Control Throughout

\*Rayonier, Inc.  
Jesup, Ga.  
\*Buckeye Cellulose Corp.  
Foley, Fla.  
\*Rome Kraft Co.  
Rome, Ga.  
\*Bewaters Southern  
Paper Corp.  
Calhoun, Tenn.  
\*Ketchikan Pulp Co.  
Ward Cove, Alaska  
Riegel Carolina Corp.  
Acme, N. C.  
\*Under construction

Brown Co.  
Berlin, N. H.  
Southern Paperboard Corp.  
Port Wentworth, Ga.  
Mason Kraft Company  
Macon, Ga.  
Weyerhaeuser, Pulp Div.  
Longview, Wash.  
Weyerhaeuser, Pulp Div.  
Springfield, Ore.  
Marathon Paper Mills  
of Canada, Ltd.  
Marathon, Ont.

Long-Lac Pulp & Paper Co., Ltd.  
Terrace Bay, Ont.  
Columbia Cellulose Co., Ltd.  
Watson Island, B. C.  
Sorg Pulp Co., Ltd.  
Port Mellon, B. C.  
St. Lawrence Corp., Ltd.  
Red Rock, Ont.  
Fraser Companies, Ltd.  
Newcastle, N. B.  
MacMillan and Bloedel, Ltd.  
Harmac Div.  
Nanaimo, B. C.



## PULP and PAPER MILL INSTRUMENTATION

FACTORIES IN THE UNITED STATES, CANADA AND ENGLAND

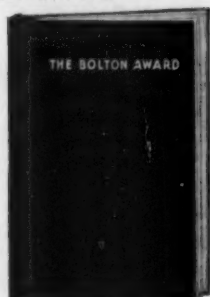
# How to judge SUCTION BOX COVERS



Check on  
these 9 features —

- ✓ Permanent Frames
- ✓ No lost suction
- ✓ Greater suction surface
- ✓ Long, trouble-free wear
- ✓ Wire life protection
- ✓ No streaking
- ✓ Ease of installation
- ✓ Economical replacement
- ✓ Easy maintenance

You get these features  
and more in Emerson  
End-of-Grain Suction  
Box Covers.



## Emerson End-of-Grain SUCTION BOX COVERS

Emerson Suction Box Covers come framed in corrosion-resistant brass or stainless steel rails channeled for insertion of wooden strips to form a complete seal on any standard suction box. The Emerson exclusive oblong slots cut on the diagonal provide maximum suction surface, even formation of the sheet without streaking, and freedom from clogging.

Constructed of Vermont Rock Maple with the grain running vertically, Emerson Suction Box Covers outwear the conventional plank covers from 3 to 10 times, depending on the speed of the machine and the grade of paper being made. With  $\frac{3}{4}$ " or more wearing surface on each cover, a minimum of dressing is required due to the stubborn resistance to wear of the woods mounted with the grain running up and down.

Wire life is protected by reducing friction of the wire on the glass-like surface of the covers and the absence of damaging grit or splinters. The design of Emerson Suction Box Covers helps to keep the wires flat, thereby reducing friction drag and power to operate.

Emerson Suction Box Covers are easy to install, easy and economical to replace. Once the complete cover is installed on the suction box, refill sections may be purchased at about half the original cost, slipped into place and locked in the installed rails by adjustable jack screws on each end.

The next time you need Suction Box Covers, consider Emerson—made for Wire or Felt. For tapered boxes. For wide boxes, multiple covers that will not sag or raise. For quick sheet formation, slotted type covers for maximum drainage. Other special applications.

## The Emerson Manufacturing Co.

Division of John W. BOLTON & Sons, Inc.

Lawrence, Massachusetts, U. S. A.



### CANADIAN NOTES

K. A. MINERS has been appointed secretary-treasurer of Great Lakes Paper Co., succeeding CHARLES ENGLAND, retired. W. H. HUNT is assistant secretary and C. R. CADDON assistant treasurer. London-born Charlie England left Fort William, Ont., to join the Backus-Brooks organization in Minneapolis,

and when the original Great Lakes Paper Co. went into receivership under National Trust Co. he was internal auditor of the company. He became secretary-treasurer when the company was reorganized in 1936. Ken Miners has been with the company since 1948.

L. F. LONG, formerly executive vice president of Building Products, Ltd., has succeeded L. S. ODELL as president and managing director.



### THEY TOUR WEST COAST

R. J. SHOVLIN (left), of Bauer Bros. Co., Springfield, O., was accompanied on tour of mills and meetings on Pacific Coast by Western representative for Bauer, KENNETH WYLIE (right), whose home and "side-line" is a nut farm in Oregon. The popular Centri-Cleaners are now known officially as Bauer-Cleaners.

### PACIFIC COAST NEWS

#### Terry Defieux Retires; Fibreboard Moves

O. T. DEFIEUX, plant engineer at CZ Camas since 1944, retired Aug. 1 after 35½ years with the organization. He joined at Ocean Falls, B.C., being assistant and chief engineer before transferring to Portland, Ore., office in charge of power plants. In 1930 he went to Camas as chief engineer of the power plant. Since last fall he has been coordinating CZ's new mechanics training program. He and Mrs. Defieux have a farm, near Camas, where they raise registered Aberdeen Angus cattle.

WILLIAM VAN VOORHIS, with Fibreboard Products, Inc., since 1936, has been transferred from the Antioch plant to its Vernon Division, Los Angeles, as plant engineer. WALTER H. DILLEY, formerly assistant plant engineer at Vernon, has been transferred to Antioch to replace Mr. Van Voorhis as plant engineer.

ROBERT F. KROHN, on leave of absence from Fibreboard Products, Inc., to attend Yale University, recently received a degree of master of forestry. Mr. Krohn has returned to the Timber Division of Fibreboard as a forest engineer.

DAVID LEE, now technical director at Potlatch Forests Inc., enjoys being back near his old home state, Montana. Potlatch mill is in Lewiston, Idaho, just a short distance from Missoula, Mont., where he went to college.

R. L. MULLEN, assistant personnel director of Longview Fibre Co., devoted his late-July vacation to training maneuvers at Cherry Point, N.C., marine air base. A naval aviation major in Marine Corps Reserve, he led flight of air division cross-country from Seattle to the Atlantic base and returned by a naval plane.

Continued on page 32



## CUSTOM Fabricators

### TRAINED PERSONNEL...

### MODERN FACILITIES...

#### Specializing in:

- Stainless Steel Products
- Stainless Steel Tubing
- Stainless Steel Valves
- Stock Valves
- Stainless Steel Fabrication
- Stainless Steel Fittings
- Stainless Steel Pipe
- Copper Smithing
- Lead Linings
- Lead Burning

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**value** in a fine product  
reflects the experience and  
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**value** in Fourdrinier wires is a matter of  
record ... paper quality and production records in  
mills throughout America reflect the fact that  
Appleton Wires are Good Wires!

APPLETON WIRE WORKS, INC., APPLETON, WISCONSIN





# SPRAY-SATIN

## a new coating clay ...

**FINE FRACTION • SPRAY DRIED • HIGH QUALITY**

### a finer product for you

**HIGHEST SHEET STANDARDS** ... demanded today by an increasing number of mills producing for quality conscious customers ... were the reasons for the development of **SPRAY-SATIN** ... an entirely new, but production proved, fine fraction coating clay.

*Spray Drying - another Edgar First*

For many years it has been known that the purest and most uniform clays could be produced by the "Spray Drying Method" ... this is the same process used to make your morning's instant coffee. Many years of experimentation, development and commercial production by Edgar technicians have made "Spray Drying" a commercial success. The result is a new \$750,000.00 plant expansion to provide you with the finest coating clay modern technology can produce.

try **SPRAY-SATIN** in your own plant



with these solid

cost saving advantages



**BONE DRY**—Only with Spray Drying can you have a guarantee of less than 1% moisture without ever having the clay over-dried. In SPRAY-SATIN you will never find a pinhead . . . never a particle of calcined clay.

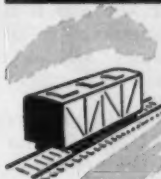


**HIGHEST PURITY**—In addition to finer than usual mechanical screenings, the spray drying process makes possible a magnetic screening of the slip to produce a purity of product never before achieved.

**FREE FLOWING**—EDGAR SPRAY-SATIN flows like sand. There is no caking, no arching in silos. Works wonderfully in airveyors and gravity flow systems. You will experience real cost savings in the handling of SPRAY-SATIN.



**HIGH UNIFORMITY**—Day in and day out and year in and year out, the spray drying process produces a product of unmatched uniformity. The precise controls of the spray drying method makes this high uniformity possible.



**HIGH BULK DENSITY**—Another unique advantage of the "Spray Drying Method" is a product of unusually high bulk density. For buyers who have storage problems, or who enjoy "incentive loading" freight rates, or who use covered hopper cars, there are substantial savings in the use of SPRAY-SATIN.



**EASY MAKE-DOWN**—Before the slip enters the final spray drying process a dispersant is added. You will find that SPRAY-SATIN will go into suspension almost immediately . . . make-down time is dramatically reduced.

**Edgar Division**



METUCHEN, NEW JERSEY

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Try a sample run  
of SPRAY-SATIN  
in your own plant . . .  
the product will  
prove itself.

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Please send me, without obligation, sample as checked ☐ 2 lb. ☐ 5 lb. ☐ 10 lb.

Name

Company

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City  Zone  State

**PACIFIC COAST NOTES**

**JAMES RAMSEY**, asst. paper mill supt., Everett Pulp & Paper Co., may have a doctor in the family. Son Jim, 18, will study medicine at U. of Wash. this fall on a \$600 Mark Reed Scholarship, sponsored by Simpson Logging Co.

**ANSON MOODY**, vice pres. & mgr., Everett P&P, and Mrs. Moody are currently enjoying a trip through Europe.

**KENNETH ROBERTS**, recently pulp shift foreman at Potlatch Forests, Inc., Lewiston, Ida., has joined Weyerhaeuser Pulp Div. at Longview in this same capacity; **LEROY SIMMS**, pulp shift foreman for Weyerhaeuser at Longview, filled the vacancy at Lewiston.

**LOUIS OSTENSON**, who transferred from CZ Camas to Ocean Falls early last year as assistant to paper mill superintendent, has returned to Camas as assistant to paper mill superintendent—tissue end.



**PROMOTIONS BY RAYONIER**

**JOHN B. GRAY** (left), former Chief Engineer at Rayonier's Central Engineering Div., Hoquiam, Wash., has been appointed Asst. Res. Mgr. at the Port Angeles, Wash., Div., where Harry Thurlow is Mgr., according to Vice Pres. Wm. E. Breitenbach.

**RALPH J. KUTCHERA** (right), new Chief Engineer, Central Engineering Div., RAYONIER Inc., Hoquiam, Wash. He helped Consolidated Water Power & Paper's **BILL THIELE** build big Pedenwell and Castle Rock dams on Wisconsin River. Recently he was Construction Engineer for Rayonier at its new Jesup, Ga. mill.

**H. F. CARPENTER**, CZ resident manager, Port Angeles, Wash., was elected vice president of United Good Neighbors Fund for a second term.

**RAY H. BRANOM**, pres. of Instrument Sales Co., Seattle, announces his firm has become Northwest rep. for S. Morgan Smith Co. and R-S Products Corp., manufacturers of butterfly valves, strainers and pipe line check absorbers.

**CHARLES V. McDONALD**, assistant office manager at CZ West Linn plant has been promoted and transferred to assistant office manager at Camas.

**CORRECTION**



The right  
SID W.  
GRIMES

This is **SIDNEY W. GRIMES**, Secretary of the Pacific Coast Assn. of Pulp & Paper Mfrs., whose picture should have appeared on page 92 of our August issue. We regret that it did not. Mr. Grimes maintains permanent headquarters of the association at 1233 American Bank Bldg., Portland, Ore. He was a Rayonier Personnel and Safety Supervisor before he took the association post several years ago.

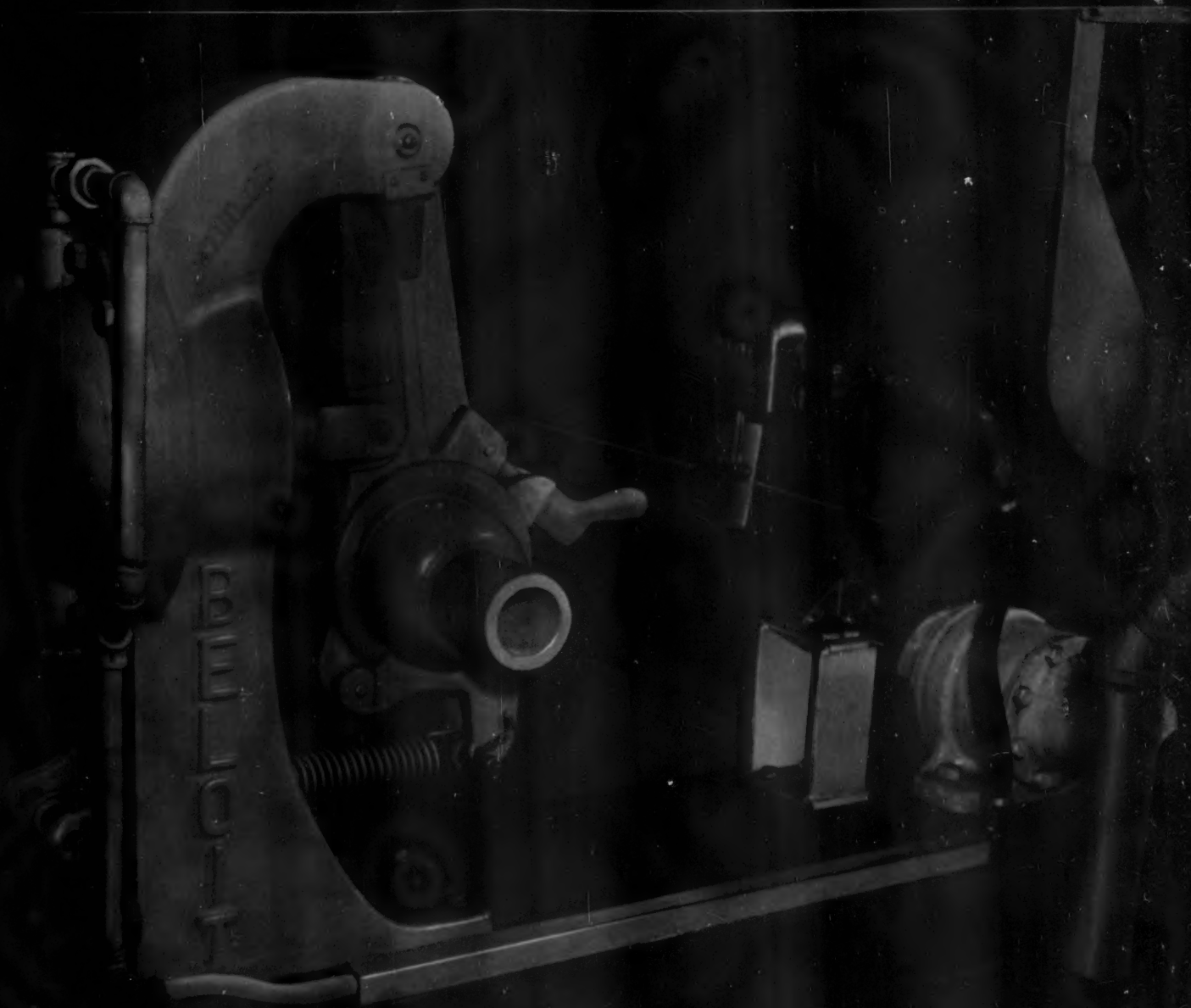


Here's something new added to the several production advantages enjoyed by the many paper mills already using The Deculator.

Now you can clean your stock at the same time you deaerate it and use no more horsepower than is required for the Deculator operation alone.



THE ROTAREAD CORPORATION represented by  
**CLARK & VICARIO CO.**  
Bronxville, N. Y.



**BELOIT AIR GUIDES** have been tested by years of dependable service in guiding felts and wires. Air at moderate pressure provides smooth, prompt control at all machine speeds, without any ratchet mechanism. The rugged simplicity of the Beloit design means trouble-free operation with minimum operator attention and low maintenance cost.—*Beloit Iron Works, Beloit, Wis.*

# **BELOIT**

WHEN YOU BUY BELOIT...YOU BUY MORE THAN A MACHINE!

**PAPER MACHINERY**



# SULPHUR

*from the mines of*

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75 East 45th Street, New York 17, N. Y.

*Sulphur Producing Units*

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**your gear drives**  
**GET**  
**PROTECTION**  
**PLUS...**

## **with GULF E. P. LUBRICANTS**

Gulf E.P. Lubricants do more than just prevent excessive gear wear. Their excellent water separating and rust preventive properties, their exceptional stability, and their nonfoaming and noncorrosive characteristics give your gear drives protection plus against lubrication troubles.

And it is often practical to use a Gulf E.P. Lubricant of lower viscosity than is possible with a straight mineral oil, which means that fewer grades of gear lubricants are required — your storage and handling is simplified.

The next time you order gear drive lubricants, make it an order for safe, sure protection—specify Gulf E.P. Lubricants.

For more complete information, or for expert help with your gear drive lubrication problems, send the handy coupon.

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Gentlemen:

P&P

I would like further information on Gulf E.P. Lubricants:

- ☐ Please have a Gulf Sales Engineer call.
- ☐ Please send me a copy of your pamphlet "Gulf E.P. Lubricants for Reduction Gear Drives."
- ☐ Please arrange to show a group in our plant the new Gulf Color Slide Film, "Gears and Their Lubrication."

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Quick Coupling  
Non Short-Circuiting

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FRESH WATER  
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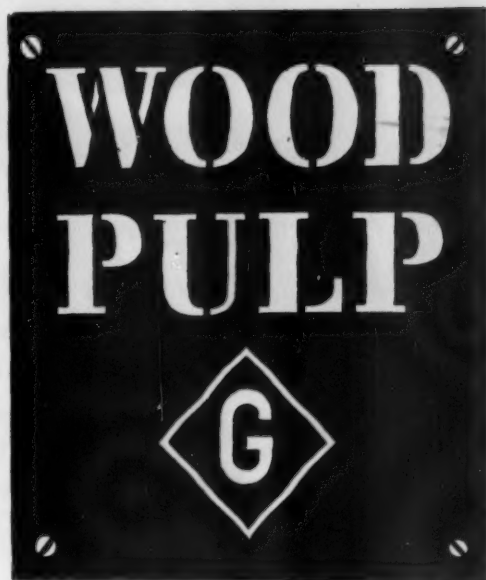
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FILTER BULLETIN No. 25406P

**Ronningen-Petter Company**

VICKSBURG, MICHIGAN — TELEPHONE 5161



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"Freedom must be *won*."

RAY LYMAN WILBUR

In our unending struggle to *preserve* freedom where it exists, to *establish* freedom where it is unknown, and to *regain* freedom where it was lost, the Pulp and Paper Industry furnishes a weapon of unique power. Paper carries the message of liberty in the battle for the minds of men.

★

## **GOTTESMAN & COMPANY**

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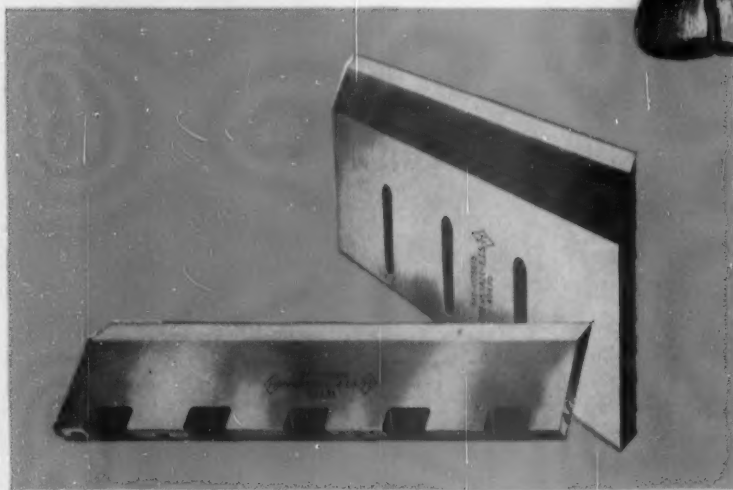
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rugged  
action*



**Heppenstall**  
**CHIPPER KNIVES**  
*durable blades for industry*



Many leading pulp mills make Heppenstall their standard specification for chipper knives. Heppenstall's record for durability provides such production advantages as:

- MORE CUTS BETWEEN GRINDS
- LESS OVERSIZE CHIPS
- LESS DOWN TIME
- LOWER OVERALL BLADE COST

The reasons may be found in Heppenstall's high standards for the development and manufacture of chipper knives. Made from high quality, electric induction steels, these long-lasting knives are famous throughout the pulp producing industry.

Make Heppenstall *your* standard specifications.



**Heppenstall**

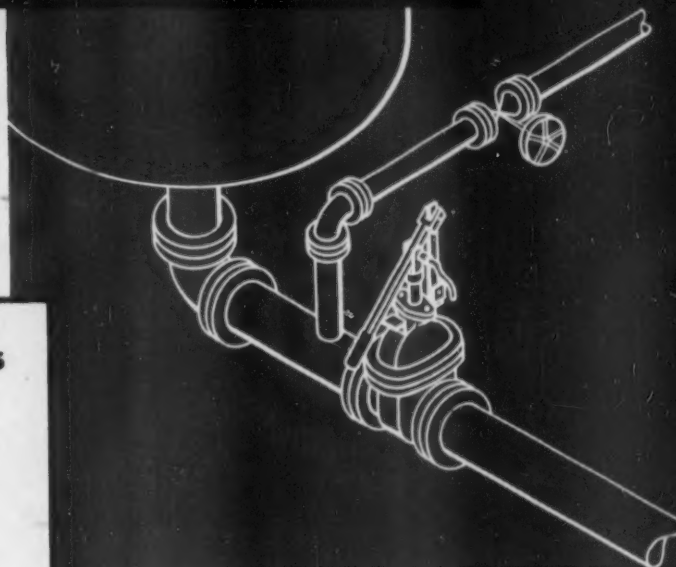
*The most dependable name in forgings*  
**PITTSBURGH 1, PENNSYLVANIA**

*Sales offices in principal cities*

# No Repair Cost in 27 Years Quality Valve installed 1927 still saving on water softener maintenance

## The Installation

At Phoenix Manufacturing Company, Joliet, Illinois, steel and rubber products plant. Original installation of 6-inch Crane quick-opening iron gate valve on flush-out line from water treating tank in soda ash-lime softener system.



## Valve Service Ratings

**SUITABILITY:** Never failed

**FEATURES:** Rugged, easy-to-service design

**MAINTENANCE COST:** Zero

**SERVICE LIFE:** 27 years—still on job

**OPERATING RESULTS:** Lower cost water treating

**AVAILABILITY:** Crane catalog item—Current No. 471

## The Valve

Further improved inside and out in many ways since 1927, modern Crane Iron Body Gate Valves keep making these performance records. Quick-opening design No. 471 shown, is but one member of this big, complete in size and pattern family. Includes OS&Y and inside screw valves; all iron and brass trim; screwed, flanged, and hub ends. Whatever your need, Crane lists it in your No. 53 catalog—or ask your Crane Representative.



## The Case History

With each operation—2 or 3 times daily—more than 27 years—this Crane valve has demonstrated the thrift of a quality-buying policy.

Not once has it failed to open wide quickly, smoothly, and again to seat tightly in this customarily rough-on-valves service.

Not once has this valve undergone any repairs or maintenance. The only attention was periodic routine servicing with occasional clean-up. Still the customer reports: "good and satisfactory service."

Today, more than ever, quality buying is your best guard against high maintenance cost. And today, as always, better quality in valves means Crane valves.

THE BETTER QUALITY . . . BIGGER VALUE LINE . . . IN BRASS, STEEL, IRON

# CRANE VALVES

CRANE CO., General Offices: 836 S. Michigan Ave., Chicago 5, Illinois  
Branches and Wholesalers Serving All Industrial Areas

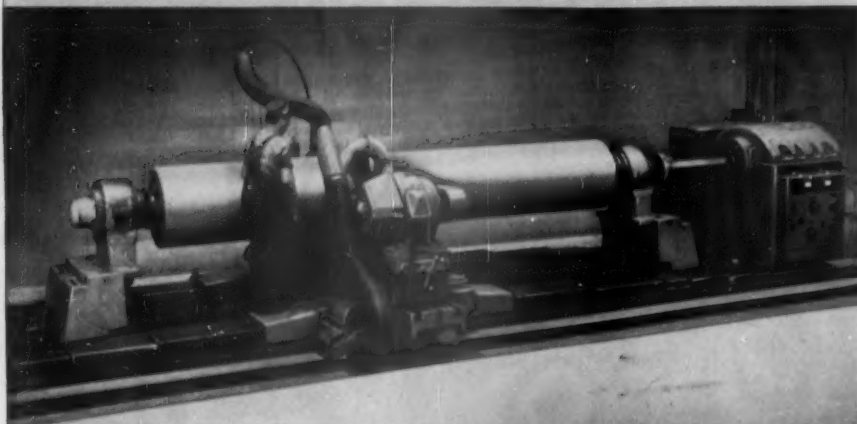
VALVES • FITTINGS • PIPE • PLUMBING • HEATING

PULP & PAPER — September 1954



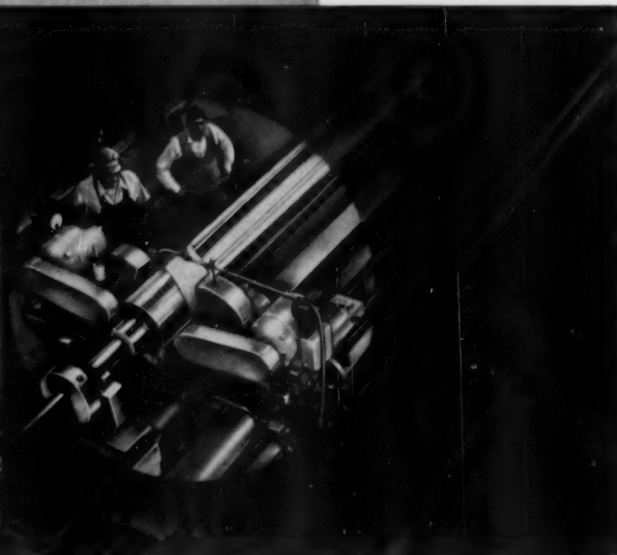


# LOBDELL ROLL GRINDERS helping to increase production



← This is LOBDELL's big 60" capacity Type CW Roll Grinder (Can handle 60" x 338" roll) installed at Raybestos—Manhattan's new rubber covering plant, Neenah, Wisconsin.

The vast and recently completed expansion program of Weyerhaeuser Timber Company, Longview, Washington, includes a LOBDELL Type GHV Roll Grinder along with many other fine items of equipment . . . for greatly increased production. And LOBDELL Roll Grinders, a design available for every need, are exactly "The Grinders" to facilitate today's stepped-up production standards.



← Here again is another case where our very popular LOBDELL GHV 42" Roll Grinder is helping to speed production . . . in this modern mill . . . at Pollatch Forests, Inc., Lewistown, Idaho, Growers and Manufacturers of Idaho Forest Products.

**LOBDELL ROLL GRINDERS**—Rugged, extremely accurate, with ease and flexibility of operation; in full range of sizes for all mill requirements. Three basic sizes designated for alternating current drives, varying in sizes according to roll diameter, length and weight; two larger sizes designated for direct current drives; and for maximum roll diameters of 48" or 60", weighing 40 or more tons. Write, today, for the Roll Grinder Catalog.

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- MACHINE CALENDER STACKS      ● ROLL CALIPERS      ● ABRASIVE CUT-OFF SAWS

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**CLARIFIER**

will help you **REDUCE** your **WASTE** instead of your **PROFITS** by recovering fiber, filler and water — as well as eliminating your white water pollution problem.

Learn how the "SEDIFLOTOR" Clarifier can help you streamline your waste water handling . . . with **IMPORTANT SAVINGS** to you. This coupon can bring details . . . quickly.



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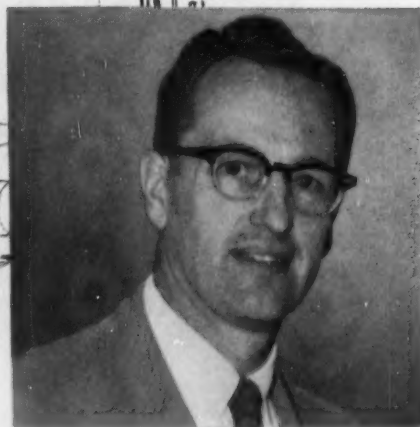


call in your

## Albany Felt sales engineer

Albany sales engineers constantly strive to improve felt performance on your machines. They are trained in felt making, paper making, and especially in the proper application of individually designed, custom-made felts. They are backed up by the industry's leading service engineers and designers, outstanding chemical and mechanical laboratories, an extensive research and development program, and a product famous for uniformity. Ask your Albany Felt sales engineer to make a felt performance check with you on his next regular call.

The goal: MORE TONS PER DAY.



Charles W. Page

Mr. Page services paper mills located in states from Indiana to New York. Prior to joining the sales engineering staff of the Albany Felt Company, he was associated with Textron, Inc. of Nashua, New Hampshire. He studied industrial engineering at Cornell University and served over four years in the Army Corps of Engineers.

**FREE! Felt Performance Record Book for Mill Superintendents, Managers, Purchasing Agents.** Write for your handsome leather binder containing convenient forms for maintaining records and graphs of felt performance, felt inventory, etc.



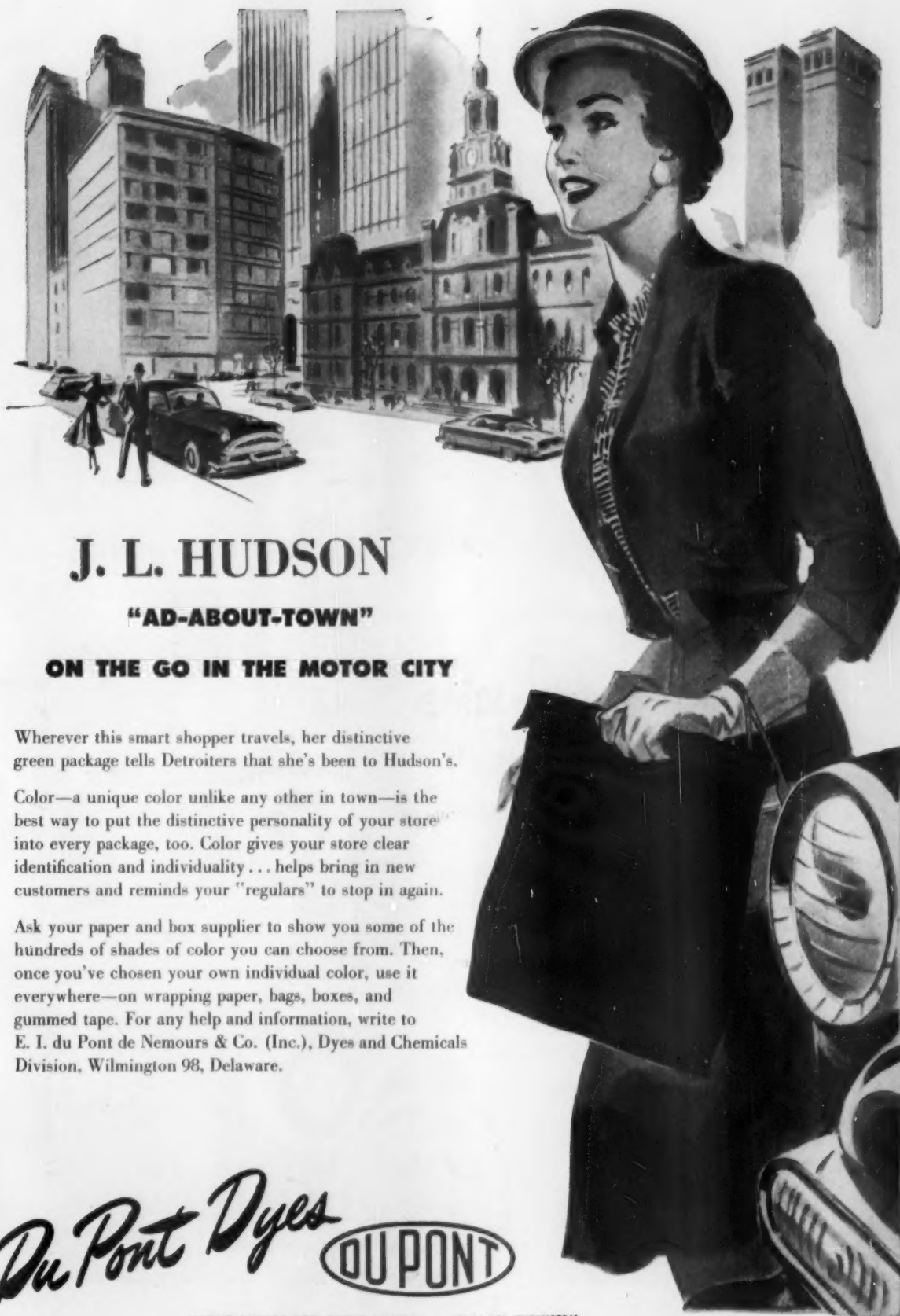
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*World's Largest Manufacturer of Paper Machine Felts*

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Other plants: Hoosick Falls, N. Y., North Monmouth, Maine, Cowansville, Quebec





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"AD-ABOUT-TOWN"

### ON THE GO IN THE MOTOR CITY

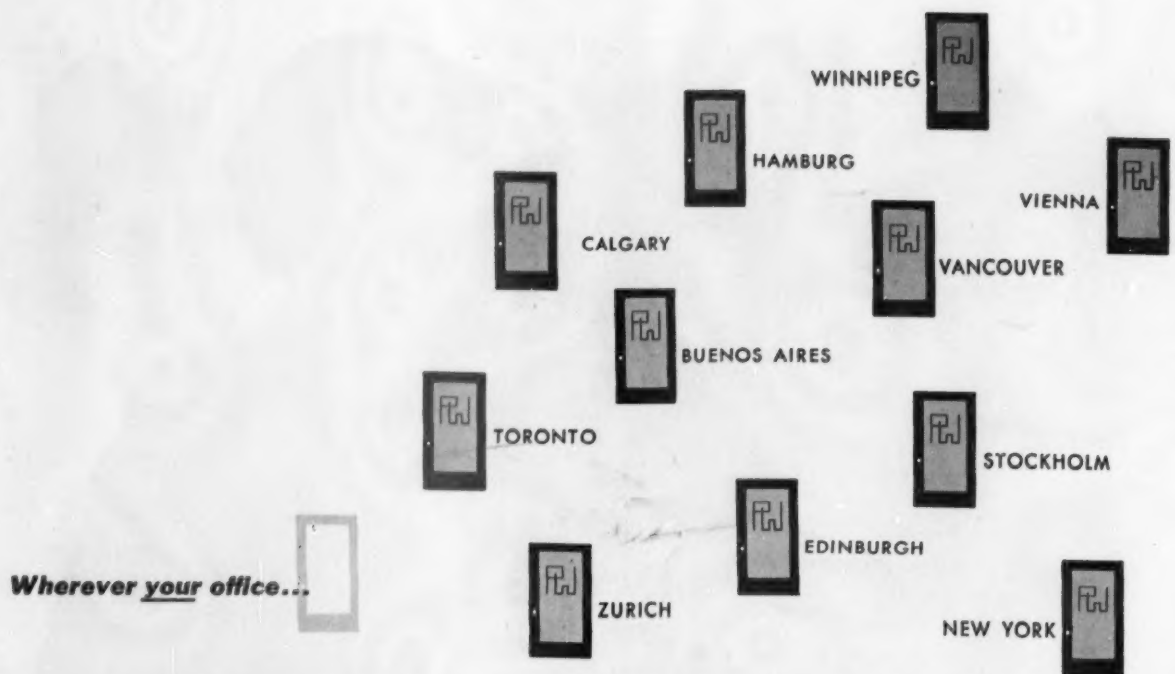
Wherever this smart shopper travels, her distinctive green package tells Detroiters that she's been to Hudson's.

Color—a unique color unlike any other in town—is the best way to put the distinctive personality of your store into every package, too. Color gives your store clear identification and individuality . . . helps bring in new customers and reminds your "regulars" to stop in again.

Ask your paper and box supplier to show you some of the hundreds of shades of color you can choose from. Then, once you've chosen your own individual color, use it everywhere—on wrapping paper, bags, boxes, and gummed tape. For any help and information, write to E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Delaware.

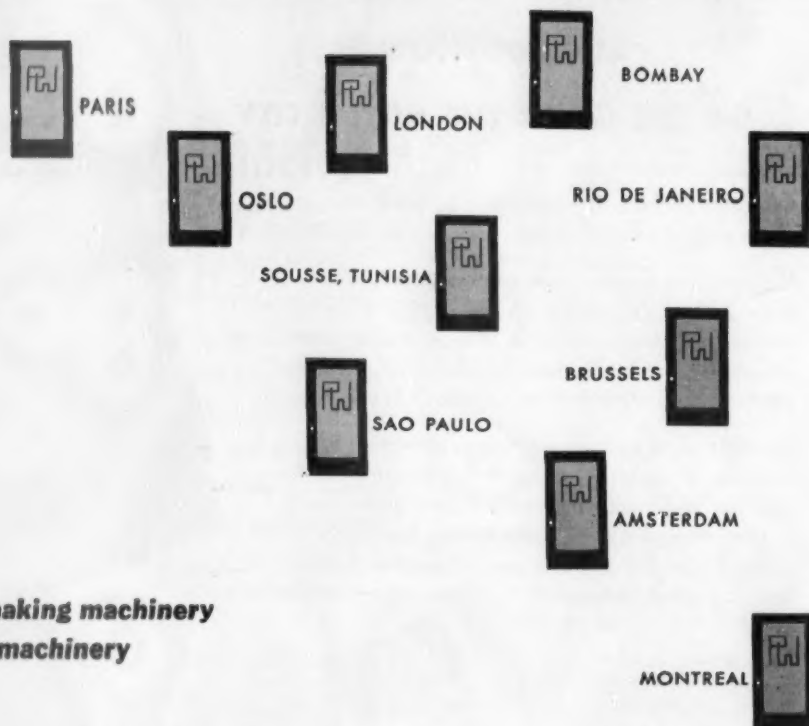
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Wherever your office...

there's a **PARSONS & WHITTEMORE** office "next door"



for **pulp**  
**paper**  
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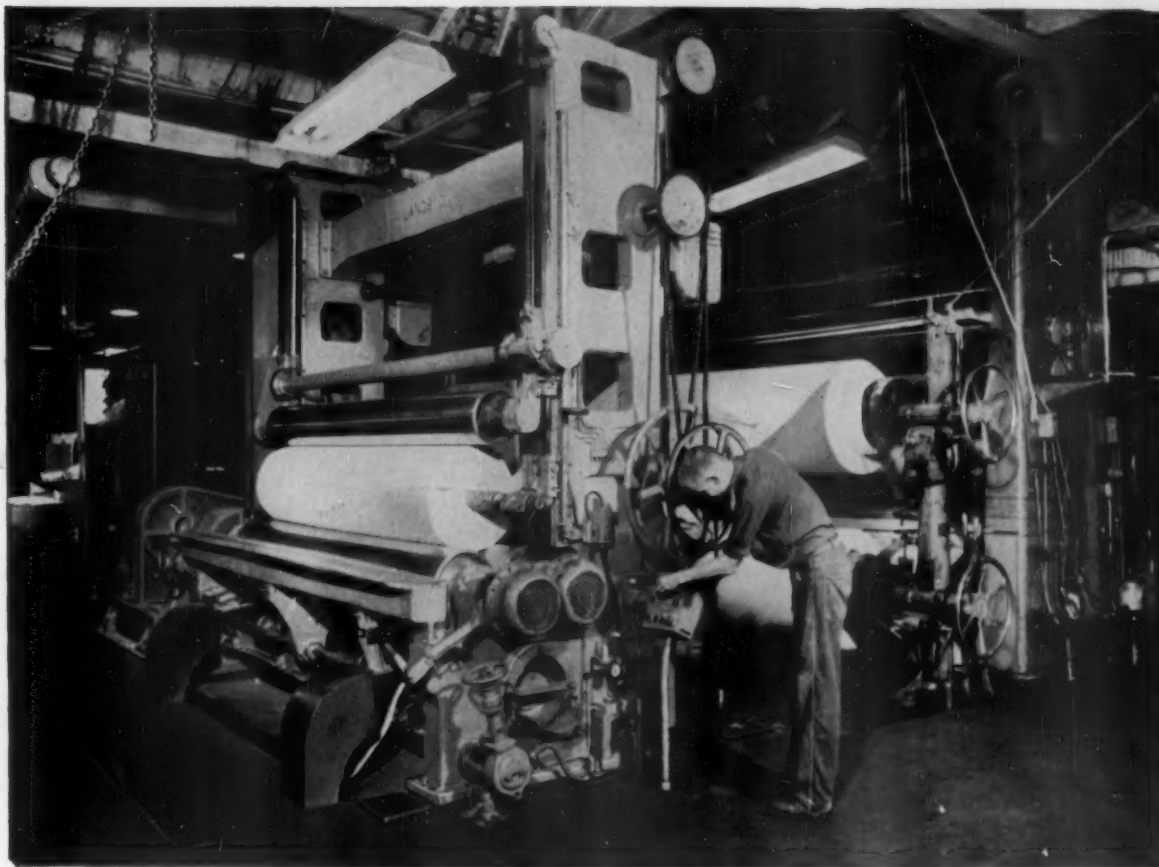
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INDUSTRY SINCE 1853

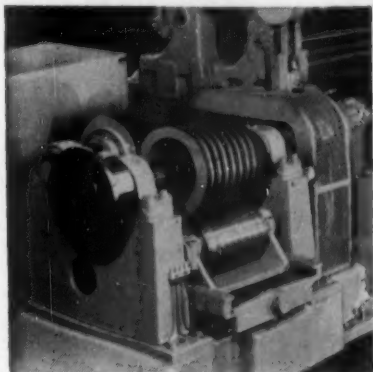
**LYDDON & CO.,** 35 New Bridge St., London EC4, England

**PARSONS & WHITTEMORE,** 250 Park Avenue, New York 17, New York



Typical tough winding job is this fine writing paper handled by Langston Slitter & Winder at Wausau Paper Mills Co., Brokaw, Wis. Engineered controls enable precise adjustment of rider roll pressure and drum overspeed for consistent, optimum roll density.

## Facts about roll density and **Langston Slitters & Winders**



Variable pitch sheave is adjustable on high speed Langston Winders to vary overspeeds of rear drum and rider roll simultaneously. Because they are quiet, require little maintenance, and are more efficient than flat belts, only V-belts are used on Langston Winders.

Wind a roll too tight, and it may burst or buckle. Too loose, and it may telescope. There is an ideal roll density for each thickness and strength of paper—which Langston Slitters & Winders are designed to provide.

Rider roll pressure, for example, is variable over a wide range and can be closely controlled to suit varying kinds of paper. This is especially important at the start of the wind—before the roll picks up weight of its own.

On high speed Langston Winders using V-belt drive, controllable overspeeds of rear drum and rider roll keep sheet constantly taut as it is wound. Tension can be further controlled within close limits by one of a variety of different braking systems on the unwind stand.

Other advantages of Langston Slitters & Winders include the clean-cutting, shear-cut slitters, strong sturdy bedplate and sideframes, and hydraulic roll ejector and shaft loader available on most models. Sizes to 196 inches wide and speeds to meet your specifications. Write for full information. Samuel M. Langston Co., Camden 4, N.J.



# LANGSTON

*Leadership...by design*





Airveyor installation for unloading lime to storage for re-causticizing system. Right: layout of the system.

## Paper profits come with **AIRVEYOR<sup>TM</sup>** at RIEGEL PAPER MILLS

Profits in paper-making are on the rise at Riegel-Carolina Paper Mills, Acme, N. C. because Fuller Airveyors are cutting handling costs to the core.

This new 200-ton pulp mill is equipped with Airveyors for the bulk handling of process chemicals.

**Fuller**  
CONVEYS BY  
**AIR**  
NOTHING MOVES  
BUT THE MATERIAL

### 3 Airveyors are in use:

- 1 Unloading pebble lime for delivery to re-causticizing system as illustrated. (Handles 10 tons per hour.)
- 2 Unloading pebble lime and soda ash from cars for delivery to storage. (Handles 7½ tons per hour.)
- 3 Unloading salt cake from storage and reclaiming from storage for delivery to the mix-tank in the Kraft mill recovery building. (Handles 7½ tons per hour.)

An increasing number of important pulp and paper mills in all producing areas are finding new savings in Fuller Airveyor systems in handling raw paper-making materials. Each Airveyor installation is custom-tailored to fit specific handling requirements, determined in advance by Fuller engineers. Such service is yours without cost—may be an important factor in finding new cost savings. Write today for complete information.

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BLEACHED WITH CHLORINE DIOXIDE

*Created by Papermakers  
for Papermakers*

This is a perfected bleached hardwood sulphate  
... made from carefully selected species of southern  
hardwood trees which yield the longest and finest  
hardwood fibre available. Astracel has the excellent forming  
qualities found in northern hardwoods ... *plus great strength.*

It is produced at Riegel Carolina's new pulp mill at  
Riegelwood, N. C., with every refinement and control  
known to modern pulp manufacture.

## Riegel Carolina Pulps

ALBACEL • SUPER ALBACEL • ASTRACEL

*Created by Papermakers*

*for Papermakers*

RIEGEL PAPER CORPORATION • 260 MADISON AVENUE • NEW YORK 16, N. Y.

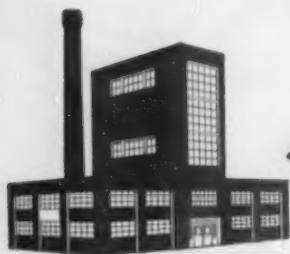
PULP & PAPER — September 1954

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# **KAMYR**

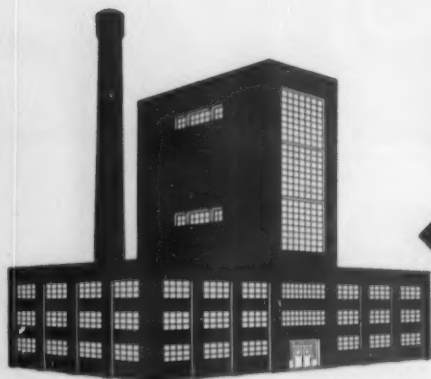
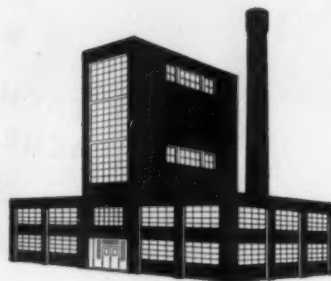
## **continuous cooking**

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← **30T/24H**

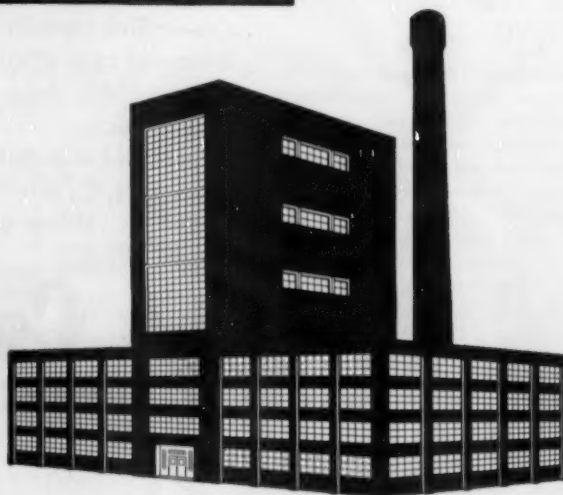
**50T/24H** →



← **100T/24H**

*And Now:*

**200T/24H** →

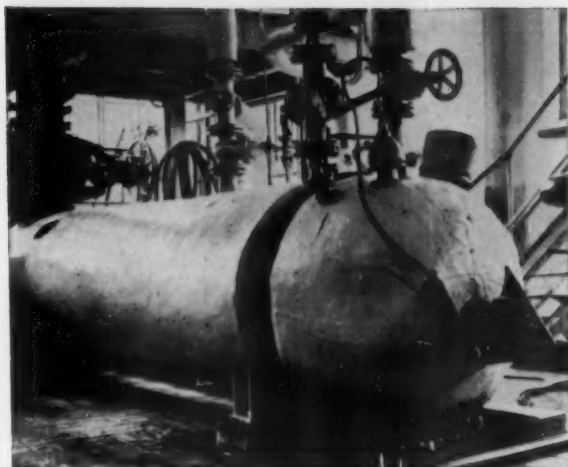


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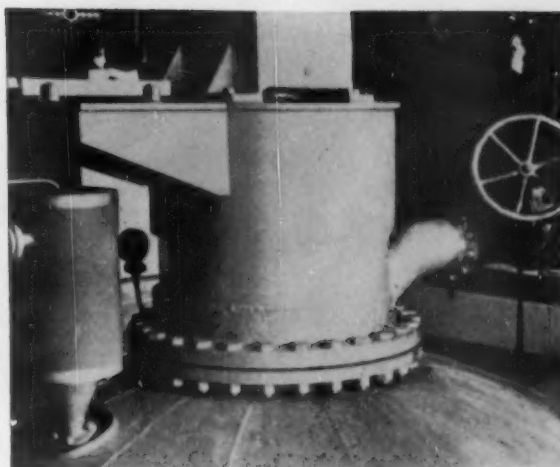
For Information Contact **KAMYR INC.** Hudson Falls, N. Y.

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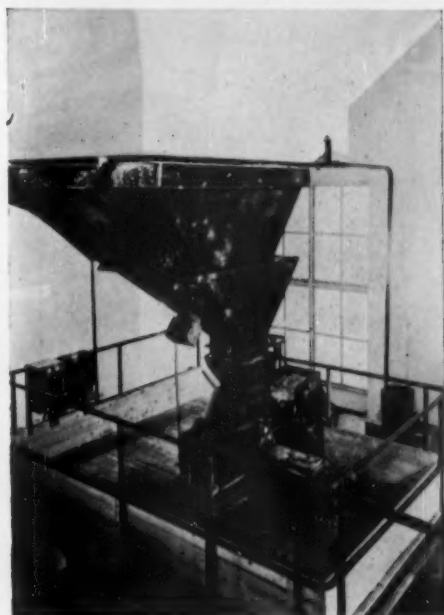




↑ STEAMING VESSEL



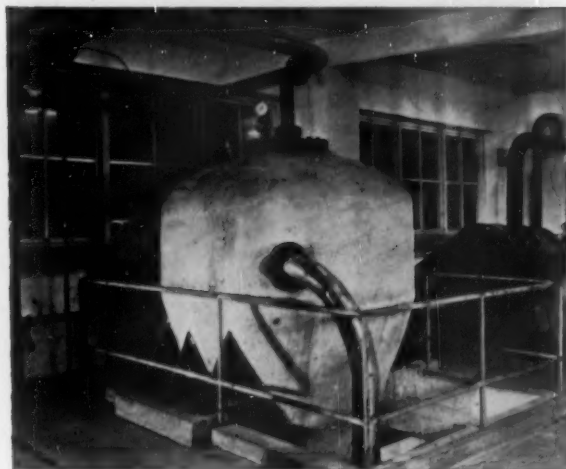
↑ TOP OF DIGESTER



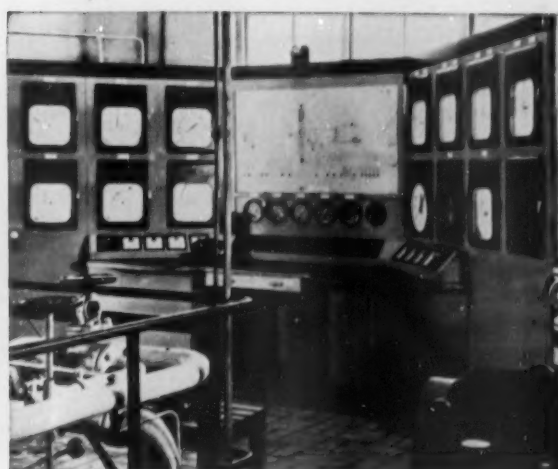
CHIP  
FEED



↓ TOP OF BLOW TANK



↓ INSTRUMENT PANEL



# KAMYR

## CONTINUOUS

## COOKING

## OPERATING

## VIEWS

**STONE & WEBSTER  
ENGINEERING CORPORATION**

**DESIGN • CONSTRUCTION**

**REPORTS • APPRAISALS • EXAMINATIONS**

**CONSULTING ENGINEERING**



**NEW YORK BOSTON CHICAGO HOUSTON PITTSBURGH**

**SAN FRANCISCO LOS ANGELES**

**AFFILIATED WITH  
STONE & WEBSTER CANADA LIMITED  
E. B. BADGER & SONS LIMITED**



**NEKOOSA-  
EDWARDS**  
*again*  
**SELECTS  
C-E**

This time it's another C-E Recovery Unit, the second to be ordered for the Nekoosa, Wisconsin, plant of the Nekoosa-Edwards Paper Company. To help meet the growing demands of expanding sulphate operations, this new C-E Recovery Unit has been designed to burn 1,050,000 lbs of dry solids per 24 hrs, and produce steam at a pressure of 500 psi and at a temperature of 700 F.

The selection of C-E equipment for Nekoosa is nothing new. In fact, it simply marks another milestone in the relationship between Nekoosa-Edwards Paper Company and Combustion Engineering — a relationship which dates back thirty-six years to the time when NEPCO first bought C-E equipment. Since then C-E has supplied stokers and coal pulverizers, has modernized existing power boilers, has received orders — and reorders — for new power boilers and has furnished one of the first spray type recovery units to go into service in the paper industry.

The consistent selection of C-E equipment by this leading pulp and paper manufacturer is a record of which Combustion Engineering is particularly proud. Such preference is indeed significant and... when coupled with the fact that leading pulp and paper manufacturers have consistently ordered and reordered C-E equipment... it points unmistakably to sound design and efficient, reliable and economic performance.

**COMBUSTION ENGINEERING**

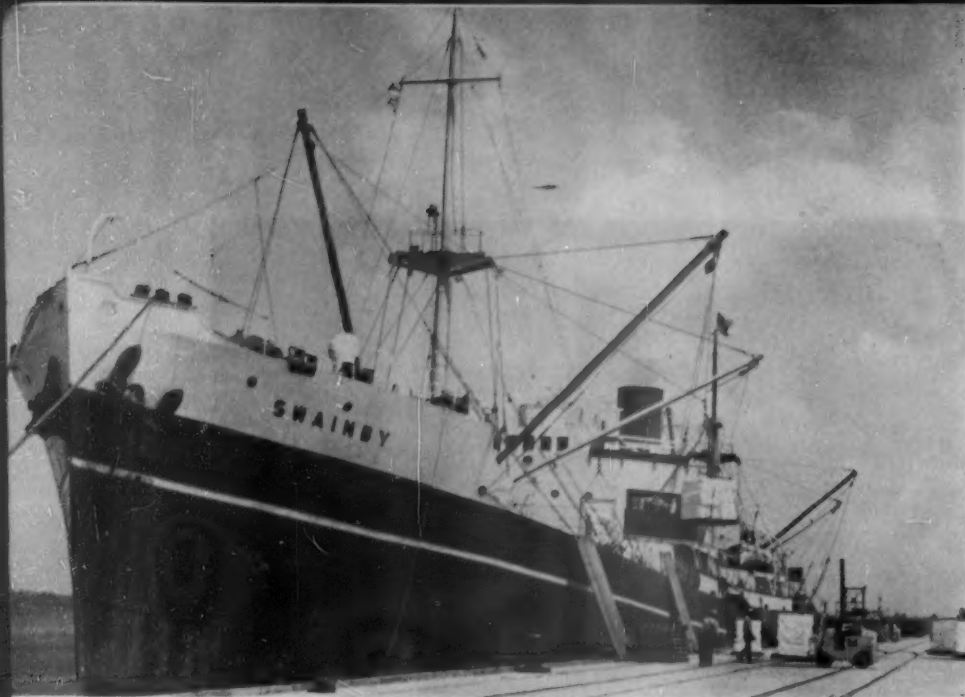
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B-773

BOILERS, FUEL BURNING & RELATED EQUIPMENT; PULVERIZERS, AIR SEPARATORS AND FLASH DRYING SYSTEMS; PRESSURE VESSELS; AUTOMATIC WATER HEATERS; SOIL PIPE





#### AMERICAN PULP GOES TO BUENOS AIRES

Loading at Wilmington, N. C., the S.S. Swainby is taking aboard high quality wood-pulp made by Riegel Carolina Corp.'s modern bleached kraft pulp mill. It is destined for Buenos Aires, where, incidentally, the international Latin American Pulp and Paper Conference will be held in October. Riegel's mill is 20 miles from Wilmington at the new mill town of Riegelville, N. C.

### On Eve of LATIN AMERICAN PULP AND PAPER CONFERENCE—

## How To Improve Inter-American Trade—A Healthy Combination is What's Needed

IT WILL BE NEWS to a lot of leaders in the North American pulp and paper industry that an international conference drawing participants from many countries in Europe as well as Latin America, will be meeting in Buenos Aires from Oct. 18 to Nov. 2 to discuss the future of pulp and paper south of the Rio Grande.

A few North Americans are going to the meeting, the writer included, to give papers on a wide range of subjects. What it all adds up to is this—an effort to evaluate natural resources, economic conditions including markets, and technical and manufacturing requirements for building a pulp and paper industry in Latin America, many times greater than exists today.

United Nations and Latin American governmental agencies are sponsoring the conference, biggest of its kind ever held. FAO, ECLA, TAA, and Unesco are participating. Government representatives will be there. And there will be some European and North American business men, who are hopeful of doing more business in Latin America.

*(The paper to be given by Mr. Peterson at Buenos Aires deals with the influence of a stock preparation system and paper machine design characteristics on quality and production development of existing paper-making equipment. It will be presented during a session on technical subjects. During the 2-week conference representatives from some 16*

**BY FRANK T. PETERSON**

**Mr. Peterson, Executive Vice President of Black-Clawson Co., wrote this article for PULP & PAPER on eve of leaving for Buenos Aires to address a Latin American Pulp and Paper Conference there. Last year he toured Latin America for his company.**

*countries will take part in the program. Other participants from North America include Parsons & Whittemore Inc., Cellotex Corp., Charles W. Boyce, Louis T. Stevenson, Forest Products Laboratory, USDA, Sandwell & Co., and Stadler, Hurter & Co.)*

Frankly, we are hopeful this meeting may contribute to a much needed stimulation of inter-American trade, while it is building up an industry in Latin America. Rightly or wrongly, I have come to some conclusions about what might be done about stimulating inter-American trade.

A step in this direction, I believe, would be the setting up of an inter-American trading commission tied in with a good financial institution which would be willing to advance credits to South America and would honor draft commitments of South American banks.

The North American woodpulp producers this year are taking a new look at the world, seeking new markets for

their pulp. Other American manufacturers are also doing this. It is quite apparent that as the huge American productive machine works less and less on defense and war materials, more capacity is available than present United States demands require. The means are being sought to stimulate an American export market. This is true in respect to woodpulp, as it is also true in respect to the capital equipment used to manufacture paper and paper products.

Therein lies a potent possibility for Latin American development. Paper mills and paper converting plants could be economically built in the immediate future, to be supplied with woodpulp from North America. Pulp mills could come later. The problems of developing and producing wood or other resources and of manufacturing pulp are complicated problems, but paper and paper products and other pulp products could be manufactured now, and both the United States and Latin America would profit.

#### How To Stimulate U.S. Exports

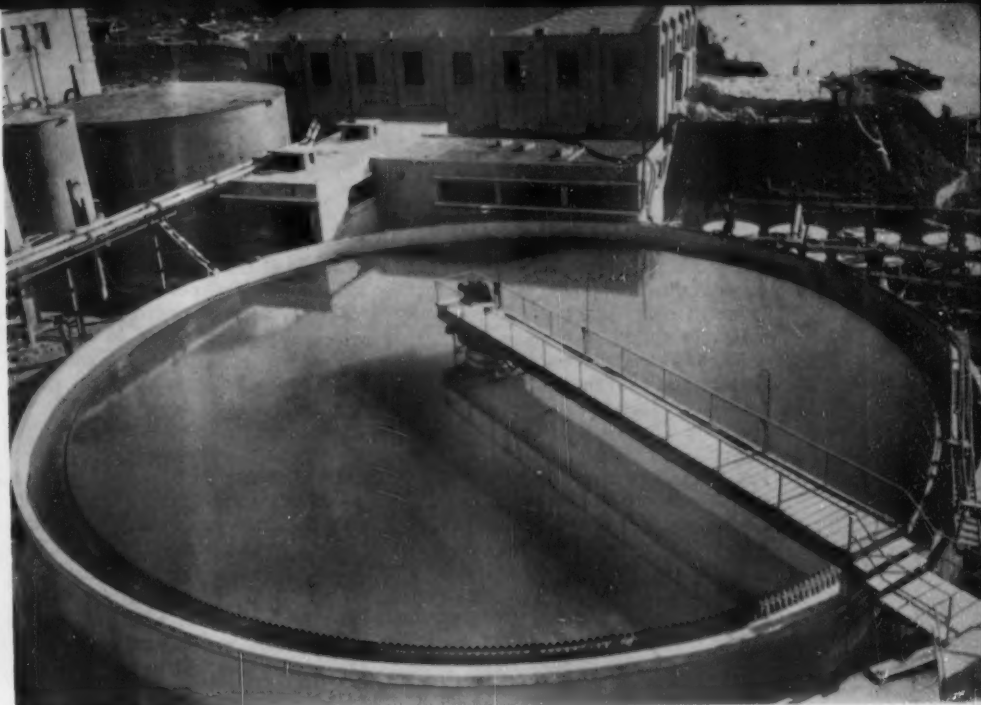
As I see it, there are three ways to stimulate more export business for the United States:

(1) Stimulate more freedom of trade by carefully considered, non-political revisions of tariffs and by lowering trade barriers of all kinds, in order to build up surpluses of American currency abroad.

(2) Institute a stronger credit ar-

## U.S.A. EQUIPMENT IN LATIN AMERICAN MILL

DORR CO installed this Dorco Hydro-Treater, 90 ft. diameter, to remove turbidity, color and algae from water for JUAN ORTIZ alkaline pulp mill of Cia. Cellulose Argentina, 200 miles above Buenos Aires on Parana River. It has two Hydro-Treaters, preceded by two Dorco Flash Mixers, removing 97% turbidity from 25 m.g.d. of process water.



rangement with foreign countries for delayed payment and in so doing, set up some sort of an entity to stimulate inter-American trade.

(3) Encourage the investment of American capital abroad. In this respect, it has been suggested that the American government could help by easing taxes on incomes from foreign investments. American money thus would be encouraged to build paper mills and mills to convert pulp and to build machinery manufacturing plants in Latin America.

My observations over a number of years stationed in London or in traveling abroad in many countries, are that there are two conditions or threats which inhibit the American industrialist from investing in plants in foreign countries. These are: (1) Lack of definite guarantees of free convertibility of profits back into U. S. dollars; and (2) possibility of expropriation of the American industry abroad by local governments or a repudiation of manufacturing or other agreements.

Carefully calculated removal of some trade barriers and stimulation of trade, and the setting up of entities for purchase credits, would seem in themselves to encourage investments abroad, and tax concessions for such investments would do even more.

Obviously, if American financed industries in Latin America can produce profits which can be used to purchase American goods, the cycle of trade will be strengthened.

THE AUTHOR—  
FRANK T. PETERSON,  
who will soon be  
headed for South  
America again.



## About Mr. Peterson

The author, Frank T. Peterson, is executive vice president of The Black-Clawson Co. Cliff Crawford is president. Mr. Peterson devoted a great portion of his time to spearheading Black-Clawson business in Europe, South America and abroad. Thus, PULP & PAPER felt he was eminently qualified to write on this subject of commerce with Latin America—right on the evening of the United Nations' sponsored Latin American Pulp & Paper Conference in Buenos Aires. And so, invited him to write it.

Mr. Peterson is a graduate of Syracuse University and his early contacts with the industry were in northern New York. But he soon was in Europe for Black-Clawson, stationed in London, but working in other countries, too. Black-Clawson International Ltd. was the subsidiary which is now firmly established in London, with manufacturing facilities there. On his last year's trip to Latin America he visited several paper mills, including those of Celulosa Argentina, largest in that country, the Klabin Mills, hewn right out of the tropical wilderness in Brazil, and others.

Mr. Peterson is married, has a 2 year old daughter, lives in White Plains. His headquarters are in New York.

He retains a private pilot's license and enjoys flying in his spare time.

## Competing with European Experience

European competition for Latin American business is very active, and it is severely felt by United States companies active in those markets.

America has done a wonderful job in engineering, designing and manufacturing. But it seems its technical and productive skills have far surpassed its experience and development in dealing in foreign business. English, French, Germans, Swedes and other Europeans have had centuries of experience in trading and dealing with one another. In competing with them, we immediately place ourselves at a disadvantage if we attempt to sell to foreign markets on a "take it or leave it" basis, stating that our products or our machinery are sold for cash on the barrelhead.

Longtime contracts for supply of products or equipment to Latin America are extremely difficult since many unforeseen obstacles can manifest themselves between the time a contract is signed and the delivery is completed.

An individual Latin American business man or customer may be eager to deal with a United States supplier or manufacturer. But he is faced with many barriers. Here are a few:

- (1) The granting of an import license.
- (2) Possibility of having to pay a poor rate of exchange for dollars he must purchase if his import license is granted.
- (3) Possibility of the exchange varying from the time he gets his import license until the purchased goods are delivered.

And the United States supplier or manufacturer who wants to do business with the Latin American has his troubles, too. It is not inconceivable that the contracts, bank guarantees, etc., could be either repudiated entirely before delivery. Or even when



the goods are ready for delivery, the foreign situation might be such that payment cannot be made for a considerable period of time.

The old story that applies to United States trade with the rest of the world is true to a certain degree in Latin America. That is, the difficulty which the customer faces in earning the dollars to do business. We do buy their coffee and cocoa and they are buying our woodpulp and our paperboard for conversion, so in some respects the relationship with South America is healthier than in areas where purchases from the United States are practically entirely subsidized by U. S. government grants. In such cases, the United States cannot expect to continue loaning foreign purchasers dollars to buy in this country.

But in Latin America, we are now facing stronger European competition because those countries—Germany, France, Sweden, England—are on their feet again after the stagnating period of the war. With lower labor rates and some other lower costs, they can sell many products or supplies more cheaply. In some cases, however, the tremendous American production machine still has advantages and can sell at lower cost.

#### Latin America Needs U.S.

In my previous trip to South America, I spent considerable time in Brazil. Its foreign exchange is lamentable. At that time its dollar deficit was close to \$500,000,000, in spite of the fact that Brazil has an annual income of around \$800,000,000 a year. It is interesting to note that consumption of paper in Brazil is only about 25 lbs. per person while it is 392 lbs. per person in the U.S.

Two British five-pound notes are examined by Dr. Dard Hunter, famous Paper Detective. One is an authentic note, the other a Nazi-made counterfeit.

—Photography by Gus Pasquarella. Reprinted by special permission of The Saturday Evening Post. Copyright, 1954, by Curtis Publishing Co.

While it is true that of Brazil's 60 million people perhaps only 20% to 30% have actual purchasing power which would contribute to increased use of paper, there is a tremendous opportunity for growth of the paper industry. North American pulp is being bought in Latin America and its equipment is in almost every mill in those countries. But Swedish pulp is still a major source of supply and as for imported machinery. German equipment tends to dominate.

One of the great outlays of foreign exchange in Latin America is for the purchase of woodpulp, from Scandinavia and North America. These countries will seek to develop their own mills. First may come paper mills and converting mills for pulp.

South America cannot compare in the strength or scope of its internal industrialization with Europe or United States. So these countries, and particularly Brazil, must look to North America or to Europe for woodpulp and for capital equipment, until their engineering and manufacturing strength is built up.

It may take at least 20 years before they build up their own material supply and their own machine industry, in order to be entirely self-sufficient in manufacturing consumer goods. There are some workshops producing equipment in Brazil, as there are in some other Latin American countries. And in a few cases, they have their own sources of supply for woodpulp and other such industrial needs.

But for a long, long time they will need a combination of supplies and equipment from abroad, as well as from home industries, and this is what Latin America needs most right now.

## "Paper Detective" Now in Appleton

"THE PAPER DETECTIVE"—Dard Hunter—is moving himself and his Museum of Paper from Massachusetts Tech in Boston to the Institute of Paper Chemistry, Appleton, Wis.

Just a couple months ago, Mr. Hunter, as reported in PULP & PAPER magazine, was quoted in a *Satevepost* story as saying that he never intended to retire, though he had passed the age of 65. He explained, facetiously:

"If I retired, I would have to give up my hobby—paper—and go to work."

That turned out to be a portentous statement, for the Paper Detective is not going to quit "working" after all. Westbrook Steele, president of the Institute, and his associates are very proud to have a new and a permanent Dard Hunter Museum of Paper, to be property of the Institute. It will be housed on the Lawrence College campus in the new expanded Institute.

Mr. Hunter will not only be the director. He also will continue his activities as the Dick Tracy of the pulp and paper world. He will give lecture and seminars on paper making history.

Maybe he will have some new information on a sensational bit of news that a PULP & PAPER editor brought back from a tour of Mexico a few years ago. This was that possibly the Mayans or even the Aztecs of America made paper before Ts'ai Lun, the fabulous Chinese long regarded as the first papermaker and credited with "inventing" the process in 105 A.D.

South of the Rio Grande, PULP & PAPER encountered some disputants to this claim. They assert that the Mayans made a fig tree "huun" paper before 200 A.D., maybe much earlier. And Aztecs were known to be making "amatl" paper before Cortez arrived.

And the Mexicans also scoffed at the common belief north of the Rio Grande that the first European style paper in the New World was made at Rittenhouse, Pa. Instead, they say, it was made in 1575 in a Spanish mill at Culhuacan, Mexico over 100 years before Rittenhouse.

PULP & PAPER's interviews were with Mexican scholars such as Hans Lenz, who is president of the second biggest paper company in Mexico, and who is also the "Dard Hunter" of Mexico. Mr. Lenz has a large private library with microphotos of wood fibers, Indian made papers, etc., and his beautifully printed limited edition books on historical papermaking were shown in a Graphic Arts exhibition in New York.





### Turcotte Expresses Assurance on Market

Production of U.S. woodpulp is running well ahead of the 1953 record, Lawson Turcotte, president of Puget Sound Pulp and Timber Co. and of Ketchikan Pulp Co., indicating the industry is on its way to duplicate if not exceed last year's all time high. U.S. output totaled 9,026,000 tons in the first half of 1954, up from 8,816,000 tons in the 1953 period. Imports were reduced to 994,000 from 1,094,000 tons, exports were higher, 150,000 tons this year vs. 66,000 tons last year.

### Board Members For Japanese Alaska Co.

United States officials in Tokyo have been informed by Takuji Oshima, managing director of the Alaska Pulp Co., formed there, that he has hopes his firm, through its Juneau company, Alaska Lumber & Pulp Co., will be operating a 100,000 tons per year pulp mill by 1958.

PULP & PAPER also learned by way of Tokyo that R. E. Robertson, a Juneau attorney, is a member of the board of directors of the Juneau company, and all other directors are identical with that of the Tokyo firm.

The Juneau firm has asked the U.S. Forest Service to offer at public auction a 50-year exclusive cutting rights contract to timber in the Sitka area. The Sitka pulptimber unit as originally mapped by the USFS would only support a 30,000 tons per year mill, and about three times as much timber probably would have to be sold in order to support a 100,000 ton mill. This would be a 300 tons-per-day mill instead of a 100 tons. The Tokyo information is the first definite news to reach PULP & PAPER that the Japanese aspire to a much larger mill than previously contemplated at Sitka.

The Japanese report said the Tokyo firm hoped to acquire an existing sawmill at Sitka and begin cutting sawtimber this fall.

In due course, the Japanese would be required to give the Forest Service information on financial backing and show ability to undertake and operate a big pulp mill.

Field examinations and drafting of a sample contract would take most of this year. A Sitka unit auction offering would be unlikely before 1955, and impossible before late 1954.



**MAKES PULP FOR JAPAN**

AN 80-TON HIGH ALPHA PRE-HYDROLIZED KRAFT PULP MILL—Nippon Pulp Industry's YO-NAGO mill. Harold D. Cavin, consulting engineer of Bellingham, Wash., and chief engineer for construction of Ketchikan Pulp Co., provided complete design, specifications and plans for this mill which started up in 1953. It has continuous bleaching.

### British Pulp Decontrol Near

Dissolution of Britain's Ministry of Materials is interpreted in that country as bringing nearer the day when control of pulp and paper imports will be abolished. The amount of money spent on needed woodpulp from abroad has been limited since Nov. 8, 1951.

### New Mills and Expansion Plans in British Columbia

Now that Elk Falls Co., Duncan Bay, B.C., is going ahead with a new kraft pulp mill, with Howards Simons, Vancouver, B.C., as consulting engineer, one of the next woodpulp expansion projects likely to be announced in British Columbia is an increase in capacity at the Port Alberni mill of MacMillan & Bloedel and installation of bleach facilities there. The company's Harmac mill, all bleached kraft, on the east coast of Vancouver Island, was recently doubled in capacity.

Powell River Co. and B.C. Forest Products are awaiting a government decision on applications for forest management licenses before proceeding with developments likely to aggregate more than \$60,000,000. Powell River Co. has its eye on Kitimat as a site for another newsprint mill, and B.C. Forest Products, according to President E. P. Taylor, is ready to go ahead with a kraft mill at one of several sites under consideration in Cowichan Bay.

Further expansion of the Alaska Pine & Cellulose bleached sulfite mill at Port Alice has been hinted in sev-

eral quarters, and Tahsis Co., supported by the world-wide interests of East Asiatic Co., is said to be planning a pulp mill to operate in conjunction with its sawmills and extensive timber holdings on the west coast of Vancouver Island.

Celgar Development Co. is still marking time on its program for Castlegar, eastern British Columbia, but the fact that it recently was granted an extension of its contract under the forest management program of the provincial government indicates that it means business and is prepared to go ahead at an opportune time.

### Argentina Buys

In recent weeks, large shipments of woodpulp from three different postwar-built American market mills have been made to Argentina.

### Certain Yarn Prices Go Up

Prices have been increased for acetate filament yarns by both Celanese and DuPont, adding a cent or two a pound to certain packages. High alpha woodpulp is a basic material for these yarns.

ROY W. FOOTE, vice president and manager, Powell River Sales Co., Vancouver, B.C., recently toured Mexico with a Board of Trade party and he visited the Loreto mill in Mexico City where Powell River unbleached sulfite pulp is used. He was particularly impressed with the new Rice Barton machine which HANS DORSCH, chief engineer showed him.

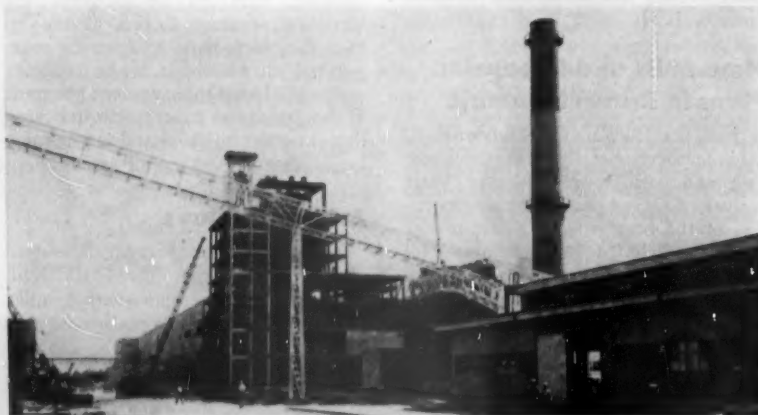


### READY FOR OPERATION— THIS DORR CO SYSTEM

As East Texas Pulp & Paper, makers of chlorine dioxide bleached kraft pulps and food boards, speeds to an Oct. 15 tentative startup date—here is first view of its completed Dorr Co. system for recausticizing, in foreground, all ready to go. In center of picture is raised blow tank, and beyond are Chicago Bridge & Iron digesters and screening and bleach plant—all in one building. Electric Steel Foundry provided digester equipment including circulation. Impco stock washers, Bird Jonsson screens, Rosenblad turpentine extraction will be found in large building.

### NEW MACHINE ROOM IS VIRTUALLY CLOSED

The long machine room, which will house the new versatile 216 in. trim Beloit Four-driner machine, almost a duplicate of the big new Beloit now running for Weyerhaeuser at Longview, Wash. Far end of this building will house Lamb-Grays Harbor cutter, layboy and roll finishing equipment with Washington Iron Works pulp baling press. Storage is beyond. E. D. Jones Jordans precede the machine. In right foreground is big Combustion Engineering Recovery unit.



### NEW 200 FT. STACK DOMINATES SCENE

This view at East Texas Co.'s new mill shows Custodia concrete stack completed. In right foreground is machine shop. Just to left of stack is Koppers precipitator, and back of that Babcock & Wilcox power plant. Tall unit in center is Combustion Engineering recovery unit. Long chip conveyor is shown as it rises to storage silos, out of picture at left. Beyond can be seen the machine building.

## Another New Mill Readies for Startup

ANOTHER BIG MILL, to become a producer of high quality chlorine dioxide bleached market kraft pulps as well as specialty food packaging boards, is heading down the home stretch to scheduled production startup on Oct. 15.

Here PULP & PAPER presents the first pictures of the almost completed mill, East Texas Pulp & Paper Co., Evadale, Texas. PULP & PAPER editors already have been on the scene, checking progress.

Richard McDonald, president, and R. M. (Mike) Buckley, executive vice president, are very pleased that construction is proceeding as scheduled. And, also, because highly competent and skilled men have been engaged for key positions and for operating crews.

PULP & PAPER ran photographs of all top key personnel—page 58, June 1954 issue. Albert G. Natwick is resident mgr.; John Hartman, plant engineer; Joe Dunn, paper supt.; Ray

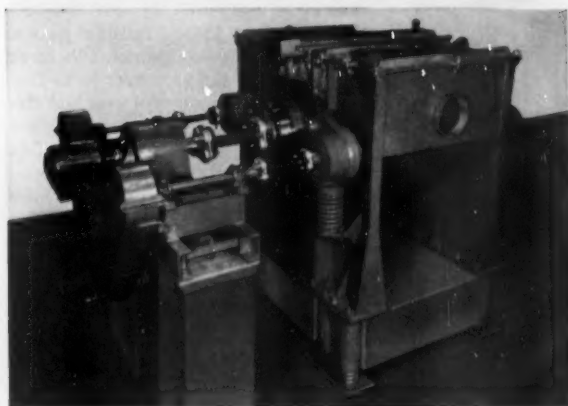
Brown, pulp supt.; Leonard Menius, personnel director; Clarke Marion Jr., gen. sales mgr.; Barney McMahon, woods supt.; E. R. Collins, traffic mgr.; Clyde Cole, controller, and Farley Bowers, scheduling supervisor. Howard A. Simons, Vancouver, B.C., is consulting engineer.

Time-Life and Houston Oil are joint owners. They own 683,079 acres of forest lands in the area. Also a modern new sawmill at Silsbee, Texas, will make chips as a by-product.

Type of Stock	Screen Plate	Consistency	Tonnage Per Day
Sulphite, unbleached	.010"	1.5%	45
	.012"	1.5	52
bleached	.010"	1.7	54
	.012"	1.5	65
	.014"	1.6	75
Sulphate, unbleached	.012"	1.5-1.9	55-68
Gum, unbleached	.012"	1.5	110
Board, semi-chemical	.018"	1.7	86
	.035"	1.6	150
De-Ink Paper Stock	.010"	2.2	110
	.012"	1.9	148
News Print	.014"	1.7	83



*Look at this record*  
**OF BIRD VIBROTOR SCREEN PERFORMANCE**



These are average consistencies handled and tonnages produced by Vibrotor Screens with 40-inch screen cylinders. Higher consistencies are often screened and larger tonnages often produced.

Whatever your screening problem, it will pay you to find out what the Vibrotor Screen can do and how much it may save in space and in screening cost per ton.

**BIRD MACHINE COMPANY**  
 SOUTH WALPOLE • MASSACHUSETTS



## Bowater Readies for More Expansion

PULP & PAPER is informed that Bowaters interests anticipate further expansion in North America. Expansion is likely, although there are no plans for the immediate future, according to Sir Eric Bowater, chairman of the corporation.

The company's Bowaters Southern Paper Corp. mill, which recently went into production, and Bowater's Newfoundland Pulp & Paper Mills with operations at Corner Brook, Nfd., are controlled by the British corporation through Bowater Corp. of North America. The latter subsidiary has headquarters in Montreal and owns the whole equity in the two North American mills and Bowater Paper Co., which distributes Bowater products on this continent.

The Bowater group plans to finance further developments or acquisitions on this continent through Bowater Corp. of North America. At a meeting in London recently, the United Kingdom parent company's first debenture stockholders approved action making this possible.

Sir Eric said: "Continued immense growth of the United States and Canada, in population and industrially,

**SIR ERIC BOWATER**  
—“We envisage likelihood of more expansion in U.S.A. and Canada”



affords our industries immeasurable opportunity for healthy expansion. We envisage the likelihood of further development and expansion in those countries. Such opportunities may present themselves at short notice and, we would want to be in a position to take advantage of them.”

### Bowaters Southern Is “Most Photographed” Mill

PROBABLY THE MOST photographed-publicized mill in the United States is that of Bowaters Southern Newsprint Corp. which started production at Calhoun, Tenn., a small village on

the Hiwassee river, in July. (PULP & PAPER will have a complete and authoritative article on this mill in a future issue).

It is axiomatic that any venture linked with American newspapers would be well publicized, and Bowaters in Tennessee is no exception. Bowaters produced pulp in June, and in July newsprint came from the first of two Beloit machines.

First run newsprint went to newspapers in nearby Chattanooga, Knoxville and Cleveland. The machine was stepped up in 48 hours, and as production grew the area of service spread. Bowaters has over 100 customers booked for the next 15 years, and as the company spread its first product, the press blazoned forth that an edition had been run on newsprint from this big, new mill.

Bowaters is the third Southern newsprint mill, and the largest. Its raw supply is “Virginia pine”—a Southern pine, but in the eyes of the lumber industry a variant from the type found in Texas and central Alabama.

Newspaper customers from all over the South will be guests of Bowaters in an October “formal opening.”

Subsidiary of the well known English company, it would have been impractical for all owners to make the trip to Tennessee to see what their invested money produced so 700 photographs were taken, covering every detail, and flown to Britain. Selected views will appear in the company's house organ.

Trade and technical press in America were to have photographs and with them a description of the mill prepared by J. E. Sirrine Co., engineering consultants for the project; suppliers were to be furnished photographs of their equipment. No facet of publicity was to be over-looked.

Hardly had newsprint reached the reel before there was a spirit of “we have the mill” among personnel. Top supervisory staff came largely from Southern mills and Corner Brook, the company's Newfoundland mill. To PULP & PAPER's associate editor from New Orleans, La., a mill man said: “We have people from Louisiana here.” Some were, but others were Acadians from “down East,” not their exiled cousins from Louisiana.

During the months of organizing it was freely said in Southern mill circles that K. O. Elderkin, the Bowaters Southern general manager, picked his men and made it impossible for them to say “no.” An engineer and mill manager of established reputation, Mr. Elderkin is also a real executive.

So Bowaters Southern has a fine mill, and a tight ship, and there should be good sailing.



### PROMOTED AT GREEN BAY

This photograph, taken by PULP & PAPER shows three of four men recently promoted at Green Bay Pulp & Paper Co. At left is PHIL ROSHONG, pilot of the plane; then, from left to right, ROBERT J. WILKES, promoted to Gen. Supt.; JAMES R. WRIGHT, now Prod. Mgr.; and WILLIAM R. NELSON, new Tech. Dir. EARL BARNHART, promoted to Chief Engr., was not present.

### Promotions at Green Bay

A series of promotions and appointments at Green Bay Paper & Pulp Co., Green Bay, Wis., has recently been announced.

James R. Wright, a Univ. of South Carolina graduate and night fighter pilot off the battle-scarred Saratoga in the Pacific War, has been promoted from pulp superintendent to production manager.

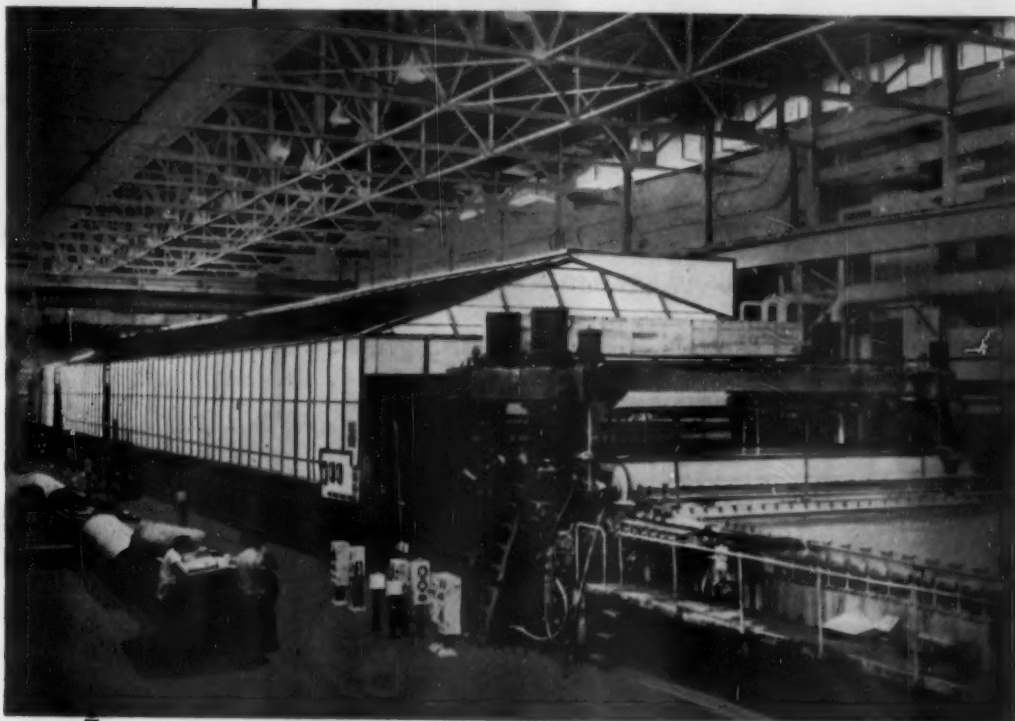
Robert J. Wilkes, one of six pulp and papermaking Wilkes brothers known from coast to coast and Wisconsin to Mexico, has been advanced from paper superintendent to general superintendent.

William R. Nelson, a Wisconsin U. graduate, has been promoted from technical engineer to technical director.

Earl Barnhart has been promoted from plant engineer to chief engineer.

## **JAMAR-OLMEN COMPANY**

*Controlled Air Systems for  
the Paper Making Industry*



**V**IEW of Dryer Section Exhaust Hood recently installed with complete Air Systems for Union Bag & Paper Corporation's New No. 6 Paper Machine.

Discover how our advanced

## **ENGINEERING DESIGN and CONSTRUCTION**

of Air Handling Systems will improve your operating efficiency and economically increase production.

**ENGINEERS**

**MANUFACTURERS**

## **JAMAR-OLMEN COMPANY**

162 N. Clinton St.  
Chicago 6, Ill.

10 East 39th Street  
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ENTRANCE TO WORLD'S BIGGEST MILL—UNION BAG & PAPER CORP., SAVANNAH, GA.

**Exclusive PULP & PAPER report: How Union Bag grew 50-fold in score of years**

## And Savannah Mill Meets Demands

### Why Union Increased Sales 11 Times

IN LESS THAN 20 years Union Bag & Paper Corp. has increased its sales volume approximately 11 times and its earning capacity 50-fold. During this period (1935-1953) Union's management team has been headed by President Alexander Calder. Mr. Calder is now completing his 41st year of service with the company and his 23rd year as its chief executive.

Conspicuous in the company's growth under Mr. Calder's leadership has been the progressive expansion and diversification of the company's product lines. Union has been the leader in the manufacture of grocers bags as long as anyone can remember. It is still the dominant manufacturer in this field but it is also among top producers of multiwall bags, corrugated containers, kraft specialty bags and waterproof papers. It also produces such secondary by-products as turpentine and tall oil, used in manufacture of paints, soaps and other products.

The erroneous statement is sometimes heard that Union is a mass producer of a limited number of products. Actually, the reverse is true. It makes one of the widest varieties of kraft paper containers, packaging materials

and by-products in the industry. The company's ever-growing list of new products has been made possible by a "product development team" which is constantly on the alert to find new uses for kraft and its by-products. Examples of profitable new products developed by Union are shown on these pages.

While Union has been diversifying its products, one of the important moves this company made many years ago was the centralizing of its major operations at Savannah. Old-timers in this industry will remember when Union had several primary plants over the country, including a pulp mill in Tacoma, Wash. Centralization cut many costs and today it has made Savannah the world's biggest mill.

Last year Union set a record with net sales of \$106,347,795, nearly two million above the previous high in 1951. For the first six months of 1954 it was heading again for a 9-figure year, with net sales for this period of \$51,355,897.

Mr. Calder cited rising freight, pulpwood and other costs, without corresponding price increases, for an earnings decline last year to \$9,889,161 from \$11,060,486 in 1952. Other



**HE CASTS THE SHADOW**

ALEXANDER CALDER, President and Chairman of the Board of Union Bag & Paper Corp., is shown here as he just received a mounted bronze and black marble base gift—on the face of this is a grocery bag sheathed in bronze. The inscription quotes Emerson—"ANY INSTITUTION IS BUT THE EXTENDED SHADOW OF ONE MAN." "Sandy" Calder has 41 years service with Union Bag.





**THESE MEN DIRECT DESTINIES OF COMPANY WITH \$106,000,000 SALES (1953)**

Banker, broker, baker, shipper and papermaker—diverse are the experiences of a typical Board of Directors, and so it is with Union Bag's head men. They are:  
Seated, l to r: H. STUART DANIELS, ROBERT W. GROVES, ROBERT G. CALDER, ALEXANDER CALDER, Chairman, HOMER A. VILAS.

Standing, l to r: G. W. E. NICHOLSON, ALEXANDER CALDER, JR., LAWRENCE D. BARNEY, MALCOLM S. BLACK, KENNETH J. HANAU, W. PAUL STILLMAN, EDWIN F. BLAIR and D. J. HARDENBROOK. WILLIAM J. MORDEN, 14th Member, was not present when this picture was made.

### As They Appear in Picture, Here Are Their Lives— Thumbnail Style

Union's Board of Directors at a recent meeting at Savannah. Left to right (seated):

**H. Stuart Daniels**, executive v.p. and general sales manager. Joined Union in 1919. Elected a vice president in 1933. In 1945 elected as executive vice president and general sales manager.

**Robert W. Groves** (shipping executive), chairman of the board, Savannah Bank & Trust Co. Partner, Strachem Shipping Co. Other directorships include South Atlantic Steamship Lines, Savannah Electric & Power Co., Central of Georgia Railroad, Columbia Naval Stores Co.

**Robert G. Calder** (real estate investment and development). Other directorships include Edlar Realty Corp. and Real Estate Holding Co.

**Alexander Calder**, president and chairman of the board. Joined the Union organization as a salesman in 1913, later becoming general sales manager. Elected vice president and director in 1925. Elected president in 1931 and chairman

of the board in 1933.

**Homer Vilas** (broker), senior partner, Cyrus J. Lawrence & Sons, N.Y.C., and governor of New York Stock Exchange. Director, Packard Motor Car Co., Milmine, Bodman Co., Millhiser Bag Co. Member, board of managers, Montclair New Jersey Savings Bank.

Back row (left to right):

**G. W. E. Nicholson**, executive v.p. in charge of manufacturing. Joined Union in 1941 as resident manager of the Savannah plant. In 1945 elected vice president in charge of manufacturing. In 1952 elected a director and executive v.p. of manufacturing. Prior to his employment with Union, Mr. Nicholson had 30 years experience in paper mills in Sweden, Canada and U. S.

**Alexander Calder Jr.**, executive v.p. and general manager. Joined the Union organization in 1940. Served as an officer in the U. S. Navy during World War II. Elected director in 1948 and vice president in 1950, executive v.p. and general manager in 1951.

**Lawrence D. Barney**, president, Hoffmann-LaRoche Inc. Other directorships include American Foundation for Tropical Medicine, Fidelity Union Trust Co. and Hoffmann-LaRoche Inc.

**Malcolm S. Black**, secretary and treasurer. Joined Union in 1940. In 1941 he was appointed secretary, treasurer and director. Prior to joining Union, Mr. Black was secretary, treasurer and director of Bliss Fabian & Co.

**Kenneth J. Hanau**, formerly executive v.p., treasurer, general manager and director of Wagner Baking Corp., Newark, N. J. Other directorships include National State Bank, Krueger Brewing Co., Canada Dry Ginger Ale Inc., Tri-Continental Corp., Public Service Electric & Gas, U. S. Pipe & Foundry.

**W. Paul Stillman** (banker) president, National State Bank of Newark, N. J. chairman of the board, Mutual Benefit Life Insurance Co. Other directorships include New Jersey Zinc Co., Lehigh Warehouse & Transportation Co., D. L. & W. Railroad, Continental Insurance Co., Niagara Fire Insurance Co., and a trustee of the Franklin Savings Institute.

**Donald J. Hardenbrook**, vice president. A member of Union organization since 1942. Elected a vice president in 1945 and director in 1946. Prior to employment with Union was active in investment banking many years.

Not shown is Director William J. Morden (financier).

factors included expansion costs at Savannah, greater selling cost and charging an added \$1,610,000 depreciation under a necessity certificate.

Net income for 6 months 1954 was \$5,479,365 (\$3.09 a share) compared with \$5,150,447 (\$2.91 a share), for first six months 1953.

## How Union is Building Up the South

THE HERMITAGE PLANTATION, site of the Savannah plant of Union Bag & Paper Corp., unlike most ante-bellum plantations in the South, was devoted to industrial rather than agricultural pursuits.

Taking advantage of a rich strata of clay, Henry McAlpin, the developer

of the Hermitage Plantation, constructed a number of big brick kilns and from their ovens came millions of brick of "unusual size, beauty and durability," which went into the construction of the finer homes and commercial houses in nearby Savannah, the "Mother City" of Georgia.

Unoccupied for many years, the buildings on the Hermitage Plantation deteriorated rapidly, and the tract itself remained just another 409 acres of unproductive land until Union Bag & Paper Corp. in 1935 leased the property from the city of Savannah.

Shortly thereafter, Union Bag began the construction of a one unit pulp and paper mill—and today, 18 years after the first pile was driven, the Hermitage tract is again a beehive of industrial activity, the locale of what is one of the South's largest industrial operations. Here 5,400 employees, whose total annual wages are



### THESE ARE MANAGERS WHO RUN WORLD'S BIGGEST MILL

UNION BAG & PAPER CORP.'s resident managerial staff are shown in this new photograph: Standing (l to r): JAMES R. LIENTZ, Mgr., Pulp & Paper Division; F. W. KELLEY, Mgr., Industrial Relations Division; ROBERT T. INMAN, Chief Engineer; J. J. ARMSTRONG, Woodlands Mgr.; A. L. SOPP, Asst. Comptroller; M. R. HAMARAT, Box Di-

vision Mgr. Seated (l to r): KIRK SUTLIVE, Mgr., Public Relations Dept.; V. E. KELLY, Bag Division Mgr.; T. T. DUNN, Vice Pres. and Resident Mgr.; M. C. GUYOT, Supt., Planning and Scheduling Dept., and M. L. TAYLOR, Technical Division Mgr.

in excess of \$18,000,000, operate what is recognized as the world's largest pulp and paper mill.

### New Trek to Plantation

According to the historians, the Hermitage Plantation, during its heyday—a century ago—was a mecca for



ALEXANDER CALDER JR., Executive Vice Pres. and Gen. Mgr., is awarding a prize to a company employee which she won in a photographic contest in the New York office.

visitors from all sections of the country. They came to marvel at the giant brick kilns and to regale in the beauty of the massive oaks and the "master's" mansion.

Today, this trek to the Hermitage Plantation is once again in evidence. Each year, thousands of people from Georgia and other sections of the country come to see the largest plant of its kind in the world, whose six massive paper machines turn out more than 1,800 tons of finished product a day and whose racing bag machines

produce 30 to 35 million paper bags every 24 hours. A busy corrugated box plant adds to the tempo of the industrial scene.

But the visitors today see more than the tremendous and almost unbelievable production capacity of Union Bag's Savannah plant. They are impressed by the fact that more than 5,000 people are gainfully employed and that many thousands of others are benefitting either directly or indirectly from the courage and vision of those who provide the tools and the loyalty and the enterprise of those who use them.

Ever since the plant was started,



H. STUART DANIELS, Executive Vice Pres. and Gen. Sales Mgr., is quite a salesman himself—he frequently quotes from Ben Franklin's "Poor Richard's Almanac," which he holds, as the supreme authority on how to sell.

G. W. E. NICHOLSON, who is Executive Vice Pres. of Manufacturing, and directed the vast expansion at Savannah.



construction crews and their accomplishments have been in evidence around the plant. There was hardly a day when "something new" wasn't being added to Union Bag's plant. Climaxing a multi-million dollar program of development is what the company refers to as its "A" program, including the installation of (1) a pulpwood flume system in its woodyard; (2) a new kraft mill to make semi-chemical pulp, which is sold under the trade name of Kemkor; (3) an addition to its recausticizing plant; (4) the installation of six new digesters; (5) additional paper mill and stock preparation equipment; and (6) the installation of a new paper machine, designed for machine speeds 350 to 2,000 fpm.

While busily engaged in keeping the mechanical aspects of its plant up to date, the plant and company officials have not neglected the "human equation" in their operation nor have they failed to accept the responsibilities as a large user of wood in making substantial contributions to the "growing of more trees for tomorrow."

The company looks upon its employe personnel as its most valuable asset, and to this end maintains an industrial relations division whose sole purpose is to render service to employes that will make for increased "job happiness," and develop work interest and company loyalty.

#### Forestry Program

As users of approximately 3,000 cords of pulpwood a day, the plant maintains a year-round public relations program through its woodlands division, the purpose of which is to instruct and encourage private land-owners to cut their trees intelligently, to grow more trees for tomorrow, and to develop a greater appreciation of trees as a recurring crop.

Incorporated in the company's state-wide program of reforestation are the distribution of from 4 to 5 million pine seedlings free of charge each year; two forestry training camps for youth; scholarships and fellowships for 27 students annually, running in value from \$400 to \$2,000 per year; 3-day forestry training camps for county agents; publication of technically sound and widely requested forestry pamphlets and literature; distribution of 30 prints of the company motion picture, *Green Gold*; supervision of 50 school forests sponsored jointly with Georgia Vocational Agriculture Department; plant visitation programs for 4-H and Future Farmers of America groups and others; and the sponsorship of many additional community relations activities which are handled as routine matters but which are important to the company's over-all community relations program.

The forestry program places special emphasis on youth participation. This is explained by the following state-

#### EXAMPLES OF PROFITABLE NEW PRODUCTS

(Top) **FEED FOR CHICK—IT'S DONE QUICK.** With Union Bag's new trough-feeder box, all Farmer John has to do is cut along printed line, pull out troughs. No need to pour into a feeder.

(Second) **MESH WINDOW FOR POTATOES.** Union pioneered this Vent-Vu bag by which shopper sees the kind of spuds she is getting. Also they get ventilated.

(Third) **NON-SKID MULTIWALL BAG.** A new Union Bag development are bags with non-skid coating on back and face. Carried on this Towmotor lift truck, stack of bags stayed aboard when truck came to sudden stop from full speed.

(Bottom) **NO CARRYING-HOME ACCIDENTS.** This new improved 1/6 bbl. grocery sack has wider bottom, shorter length and greater circumference; gives better stand-up quality, allows packer to reach bottom easily, holds 5% more than conventional 1/6 bbl. sack.

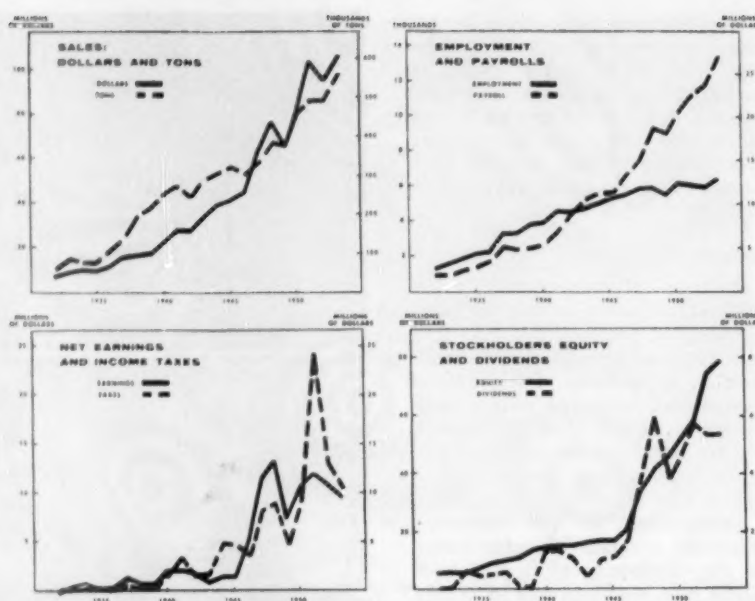




ment incorporated in a talk delivered recently by G. W. E. Nicholson, executive vice president of the company, to a New England group of vocational agriculture teachers. Mr. Nicholson said, "We want the youth of Georgia, particularly those who live in rural areas, and whose fathers have wooded areas on their farms, to acquire in their formative years as much fundamental knowledge of good forest management as possible. We want them to know and appreciate the value of trees, and we want them to understand our problems and to gain a good impression of our company and of our people."

Referring to the establishment of the conservation department in the plant's woodlands division, which might be described as the "foundation stone" of a state-wide community relations program, Mr. Nicholson said: "We launched segments of our forestry education program just about ten years ago. We soon learned that if the several projects we had underway were to accomplish their purposes, it would be necessary for us to provide not only materials and physical facilities, but professional counsel and assistance as well. As a result, we established in our woodlands division what we call a 'conservation department.' This department consists of a staff of 12 carefully selected graduate foresters and 8 tree-marking aides, whose principal duties are to render free services to landowners and to assist in establishing and directing all forestry education programs.

"In my opinion, the conservation department is one of the most effective community relations vehicles, because it represents a practical service



#### HOW UNION BAG HAS GROWN

Here is story on charts of growth of Union Bag & Paper Corp. in sales (\$106,000,000) and tons (566,000); employment and payroll; net earnings \$19,889,000 and taxes (\$10,491,000); stockholders equity (\$79,947,000) and dividends (\$5,313,000).

to landowners and is concrete evidence of our interest in Georgia's forest land and in the many problems that beset its thousands of owners."

The economic contributions made by the plant to its community, the state of Georgia, and other Southern states, is indicated by its more than \$18,000,000 annual payroll, its wood bill approximating \$18,000,000, and its \$15,000,000 annual freight bill.

Last year, more than 85,000 railroad cars were handled by the plant's traffic department.

The quicker step among the white-shirted businessmen on Bay Street and Bull Street, the general lively activity of Savannah, the busy railroads and steamships in this area, the wood trucks you see all day long on U.S. 17—all this is largely a result of Union Bag's remarkable growth. Savannah used to be called a great cotton emporium. Today it is one of the world's great paper ports.

#### Pusey-Jones Machines Are "Sextuplets"

Major unit added at U.B. is No. 6 machine. All six machines are 234 in. Pusey & Jones Fourdriniers, with General Electric drives. The new one has a GE multiple generator electronic Amplidyne controlled sectional drive, with speed range to 2,000 fpm. It has a 6,000 fpm regenerative braking winder with GE drive. The new big General Electric turbines were previously added, making 6 in all.

Dryer section exhaust hood and complete air handling systems were designed and furnished by Jamar-Olmen Co., Chicago. The exhaust hood is of removable Transite panel construction, with a continuous collection chamber for each hood section, producing equalized distribution and removal of exhaust vapors. Seven heavy duty axial flow fans exhaust a total of more than 500,000 cu. ft. of air and vapor per min.

A total of 18 separate air handling systems were also furnished by Jamar-Olmen. Heating and ventilating sys-

## New Pictures of Union Installations

IN THE JUNE 1954 issue of PULP & PAPER, in connection with its exclusive report on how some 3,000 daily tons of new production was starting up in the U.S. in an amazingly short period of a few weeks, it also was reported that Union Bag & Paper Corp. now is the biggest mill in the world.

PULP & PAPER had just visited the big Savannah mill a few days prior to its announcement of the completion of a big expansion. Major facts about it were printed in our June issue on page 49. Actually, the company had reached the virtual end of a steady program of expansion carried on over several years, which brought its production comfortably over a 2,000-tons-per-day mark.

"It looks like we are set for a while," Tad Dunn, vice president and

resident manager, told a visiting PULP & PAPER editor. "But," he added, just a little bit ruefully, with a smiling glance toward some top key supervisors who were present, "that is, unless these fellows bring in some new ideas."

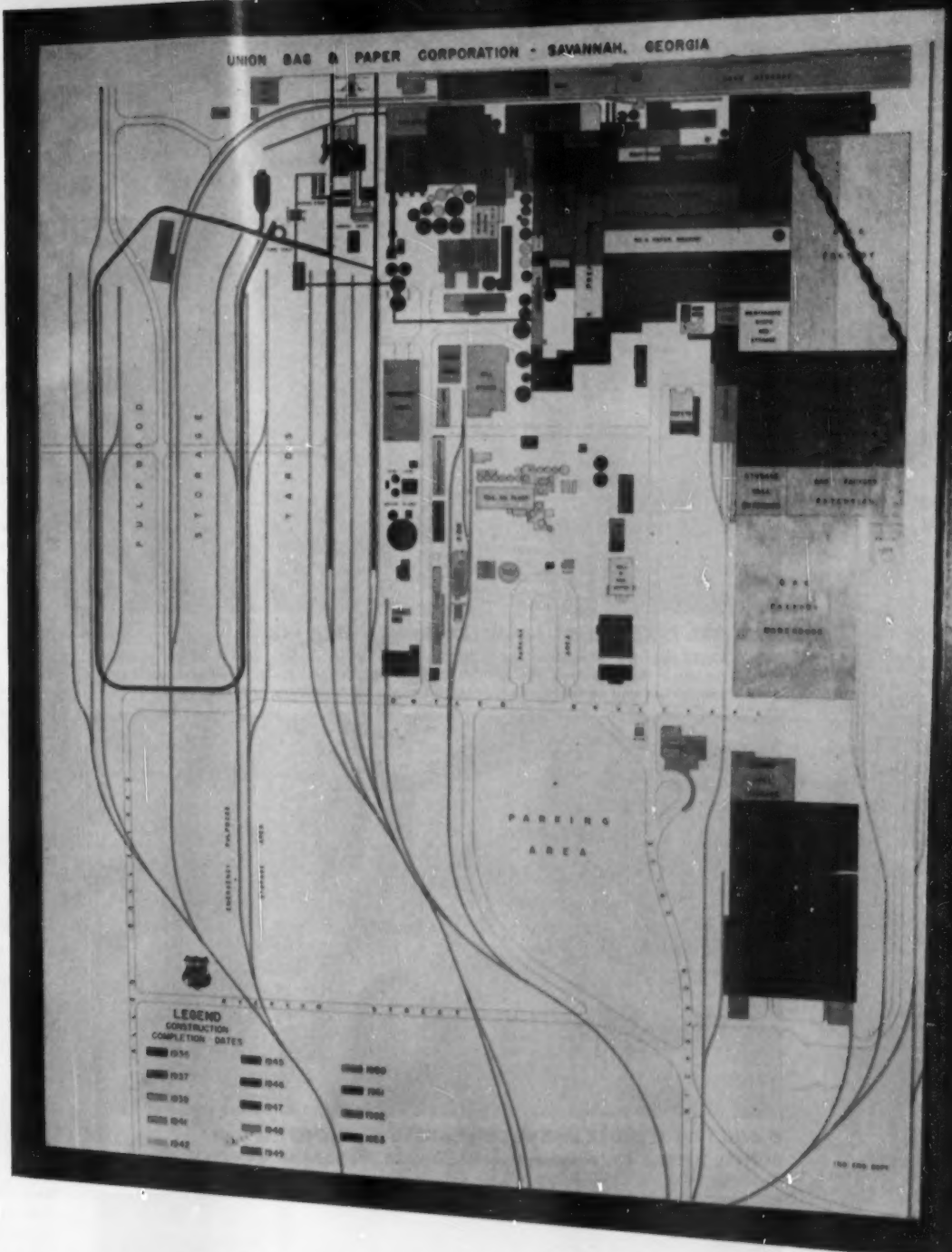
Of course, Mr. Dunn was recognizing the fact that neither this industry, nor any mill that wants to stay in the swim, can just float for very long.

For the past decade, this mill on Savannah River above that busy Southern seaport has been jockeying with International Paper's Georgetown, S.C., mill for the honor of being the world's biggest. The mill out north of Bay Street is now a little ahead of its rival, which happens to be just 160 miles up the coast on U.S. Route 17.

## WORLD'S BIGGEST MILL

On a visit to Union Bag & Paper Corp., PULP & PAPER editor took this photograph of the construction engineer's wall map which graphically tells their expansion story.

Use this map to identify the various units of the mill as shown in the big air view on the front cover of this issue.



tems include two roof supply systems, and three systems which supply heated air, or summer cooling air, direct to working areas in finishing room and beater room.

Supply air systems to electric center control room and motor generator room are cleaned by means of automatic self-cleaning type air filters. After the air has picked up the heat losses from the motor generators, it is directed into the felt supply system where it is heated to a high temperature and supplied under pressure to the bottom felts.

A trim conveying system and high pressure calender cooling system were furnished as well as a Hi-Jet system for vapor removal of the dryer pockets of the paper machine.

A Valley Iron stainless steel head-box, complete Mason-Neilan control

system, Bird felt conditioner, 8-roll calender stack, a 228-in. reel taking a 96-in. diameter roll and slitter and winder are other machine auxiliaries.

Ahead of the six paper machines is an interesting line-up of several different systems of stock preparation, which to some degree may be interchangeable on machines.

Ahead of No. 6 are 11 new Sutherland 48-in. refiners. Also the mix pump discharges to a 25,000 gpm Rotaread Corp. Deculator.

### New Recovery Plant Units

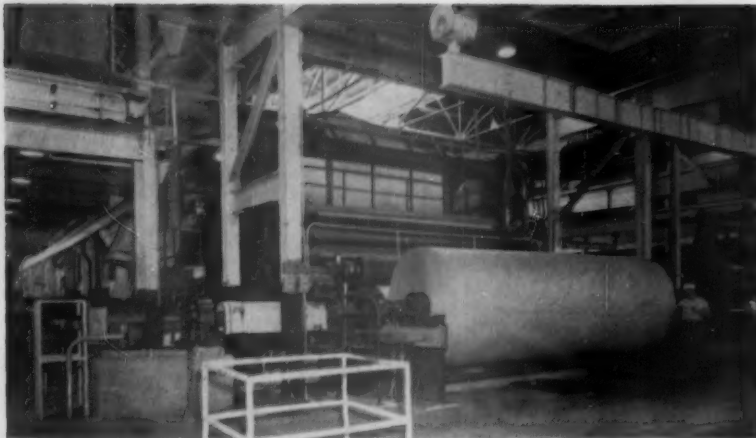
A new Combustion Engineering 350 tons per day recovery unit is spray type, designed for 475 psig 750° F. This is the first such unit with boiler tubes with fins welded on

sides and plastic chrome poured over tubes to form a water-cooled furnace bottom. Smelt created a 6-in. pool over the bottom and discharges at that depth.

A Research Corp. Cottrell precipitator is designed for 90% removal on 16,000 cu. ft. of gas per min., temperatures range 275 to 300° F. It is equipped with a wet bottom with a black liquor level maintained. Dust is kept in solution by two vertical agitators.

A Goslin-Birmingham septuple effect evaporator was added, designed to evaporate 370,000 lbs. of water from 506,000 lbs. of liquor per hour, increasing solids percentage from 14% to 53%.

Union Bag now has a straight line of 35 big digesters, with a variety of linings and types of construction,



#### THIS REEL TAKES 96 IN. DIAMETER KRAFT PAPER ROLL

PUSEY-JONES built No. 6 machine, as it did five others, at Union Bag. Jamar-Olmen provided hood over three dryer sections shown here and air system throughout. General Electric supplied these motors and entire multiple generator electronic Amplidyne sectional drive.



#### 6,000 FPM WINDER HAS REGENERATIVE BRAKING

GENERAL ELECTRIC CO. provided drive for the unwinding stand on new No. 6 rewinder at Savannah mill.



#### UNION BAG PAPER IS STORED IN THIS WELL

ROLL AFTER ROLL, Union Bag paper covers the ground in this storage well. Overhead, cranes with lifting capacity of 6,000 lbs. are capable of moving 400 tons of paper into the well and 400 tons out of it, every day. Cleveland Tram-Rail are the lifts shown in background.

which provide a plant-size "experiment" to try to settle some problems in respect to the mysteriously increased rate of kraft digester corrosion. This will be a signal service to the entire kraft industry.

A. O. Smith, and Chicago Bridge have constructed digesters here. Inconel is used in some.

Stebbins Engineering & Mfg. Co. installed carbon linings in the six newest digesters. These measure 10 ft. 4 in. diameter inside steel by 44 ft. 1 in. overall height. More about these below.

Dorr Co. provided a new white liquor clarifier and lime mud washer for the recausticizing plant.

#### Coating of Structures

Erkote 2X Corrosion Resistant Mastic, supplied by Earl Paint Co., was used as the protective coating for structural steel and tankage not requiring insulation—chip silos, elevated water tower, stock storage tanks, liquor storage, conveyors and bark screens. Erkote 3X Insulating Mastic was used for various tanks not requiring low temperature insulation—blow tank, soda ash storage tank, white liquor clarifier, lime mud washer, buffering tank, soda ash filters and backwash tank.

#### New Semi-Chem Plant

A new semi-chemical pulp mill at Union Bag has 265 tons daily capacity, but with provision for expansion to 400 tons. Neutral sulfite process is used. Digesters are similar to those on kraft, except the tops are shaped like sulfite digesters to provide for special Stebbins Engineering carbon brick linings. The brick are 9 by 9 by 2½ in. curved to the shell radius, laid in a joint material of graded digester quartz and Portland cement. In back of the carbon brick is a 1½ in. layer of grout. The semi-chemical units have circulating systems, arranged for possible future installation of a heat exchanger for indirect cooking.

All six new digesters blow to a common 24-in. blow tank, and stock is pumped to 5 dewatering screens, with capacity for continuous return to blow tank.

High consistency stock is discharged over the end of screens, and black liquor is added in chutes ahead of Sprout-Waldron refiners. Vapors are removed by stainless steel ventilating ducts.

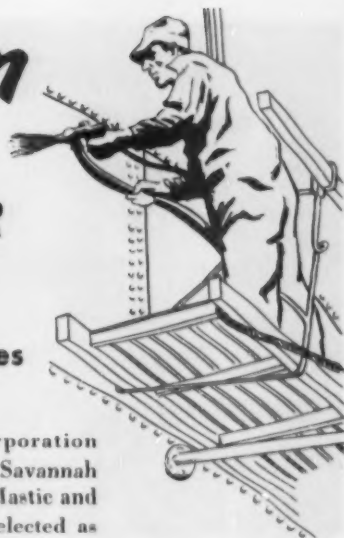
Stock from Sprout-Waldrons is pumped to two lines of Swenson 9 by 6 ft. Washers with stainless steel drainage and Transite hoods. Stock then goes to additional Sprout-Waldron refiners for secondary refining, then pumped to screen room



# ERKOTE<sup>®</sup> goes on

## at UNION BAG and PAPER

Another application of ERKOTE MASTICS that provides dependable protection for steel structures



When Union Bag and Paper Corporation expanded production facilities at its Savannah mill, Erkote 2X Corrosion Resisting Mastic and Erkote 3X Insulating Mastic were selected as the protective coatings on the new conveyors, chip bins, storage tanks and supporting steel structures. For years, these superior coatings have been protecting vital operating equipment at this company's mill, with completely satisfactory results. For maintenance-free protection, Erkote Mastics are first choice because they last for years!



### Proof of dependability on hundreds of jobs!

In pulp and paper mills, in refineries, in every industry where insulation and surface protection are a problem, Erkote Mastics are being used to combat acids, fumes and other corrosive elements. They are applied in one seamless application that bonds to practically any type of surface, and they are not affected by severe weather conditions or thermal changes.



### One source—one responsibility—for products and workmanship on every application

Since we develop and manufacture Erkote Mastics and furnish our own trained crews to apply our products, we assume complete responsibility for every job we undertake. When you select Erkote Mastics you can depend on one reliable source for both the product and the application!

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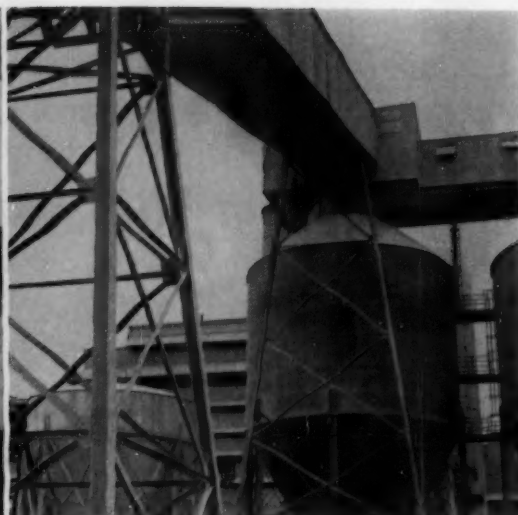
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PULP & PAPER — September 1954



#### CONVEYOR SHUTTLES OVER CHIP BINS

LINK-BELT conveying equipment is feature of the extensive wood and chips handling system at Union Bag. This shows chips feeding in one of two storage bins in new expansion.



#### HERE'S WHERE THE CHIPS GO

FROM CONVEYOR shown at left, chips are fed into one of two chip storage silos like this one. Chip silos and exposed steel conveyor are coated with Earl Paint Co. Erkote mastic for protection.

deckers. There is a main central control board for the entire wash plant equipment.

A sulfur burning plant is provided for the semi-chem plant. Sulfur comes in bulk and is melted and stored in two 450-ton insulated tanks. The plant consists of a rotary burner, two combustion chambers for discharge, a cooling tower, a chrome nickel absorption tower, a buffering tank where soda ash is added, and two 26 ft. high, 40 ft. diameter storage tanks (235,000 gals. storage capacity).

PULP & PAPER in its December 1953 issue described the ultra-modern woodyard at the Savannah mill, with a 200 cords per hour, 3,200 ft. long circular pulpwood flume system, two Lorain gantry cranes pulling logs from rail cars into flumes and the giant

Link-Belt "merry-go-round" pulpwood distribution table, supplying 6 barkers.

#### Ross Buys Midwest-Fulton And Forms New Company

J. O. Ross Engineering Corp., New York, largest builders of air systems for processing plants, has purchased The Midwest-Fulton Machine Co. of Dayton, O., leading builder of paper mill drainage systems.

J. O. Ross Engineering will continue to design and manufacture its air systems. But a new firm, Ross Midwest Fulton Corp., Dayton, will handle Midwest-Fulton business.

Midwest-Fulton systems are used on more than 75% of all paper machines and their Hydrosillator for rewinders has recently been intro-

duced. Ross now operates four plants and a laboratory in U.S. and Canada and maintains 11 sales and engineering offices. All will represent Ross Midwest-Fulton. Ross resources will be available to the new firm. Executives of Ross Midwest Fulton Corp:

S. W. Fletcher, president; J. F. Gschwind, vice president and manager; W. V. Knoll, vice president; J. F. Forsyth, treasurer; W. K. Metcalfe, secretary; G. J. Jacobs, assistant secretary. Robert M. Cook continues as chief engineer and becomes a vice president. Hugh P. Quinn and Albert J. Smith have been named service manager and sales engineer, respectively.

#### News From India Praise for World Review

The 226-in. Pusey & Jones Four-drinier newsprint machine in the first newsprint mill in India's history—National Newsprint & Paper Mills Ltd., Nepangar (p.o.), Madhya Pradesh, District Nimar, India, will start production trials by October.

This exclusive news came to PULP & PAPER from S. S. Mazumdar of this company. He also highly praised PULP & PAPER's WORLD REVIEW NUMBER, saying:

"It helps me greatly in my travels to various countries, in my visit to their paper mills, and in making important contacts."

#### Mills add Claflins

Rhineland Paper Co. mill at Rhineland, Wisconsin, and the Fibreboard Products mill at Antioch, Calif., have each installed new Claflin continuous beaters and refiners.



#### EMPHASIZES YOUTH IN FOREST PROGRAMS

UNION BAG wants the youth of Georgia in rural areas to acquire as much knowledge of good forest management as possible. This sign marks Swainsboro Forest, one of 50 school forests.

## *Lodding Means Precision*



Optical check for straightness with doctor in working position. One of many reasons why your Lodding doctor comes to you ready for the kind of action your production requires.

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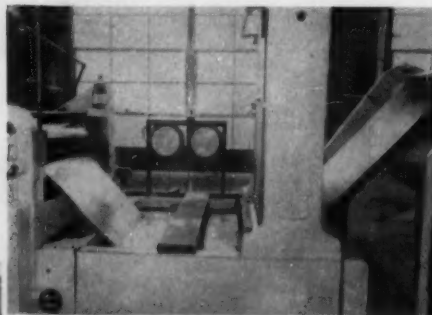
**WORCESTER, MASSACHUSETTS**

**REPRESENTED BY**

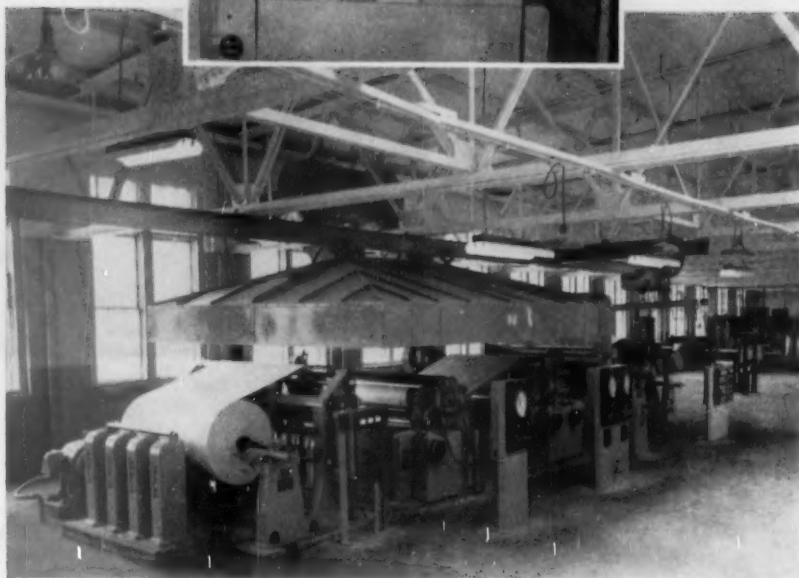
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Write for Waxing Bulletin 9-DM

**Dilts**

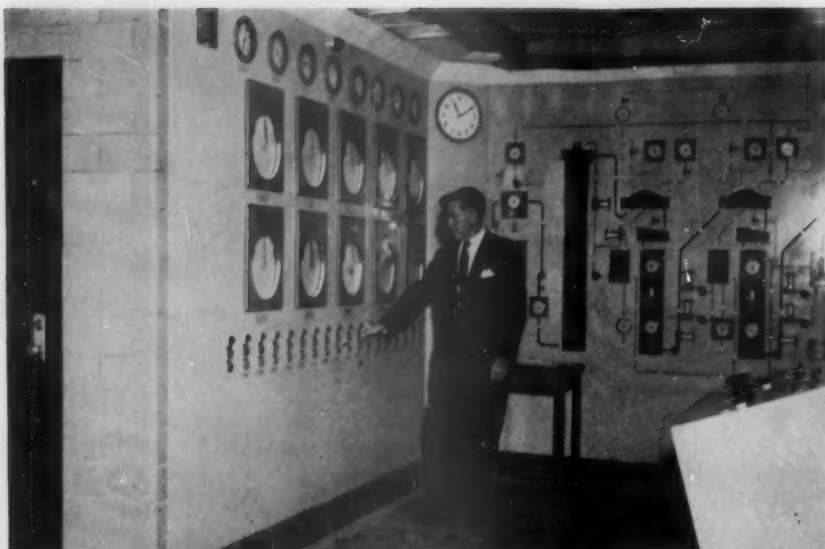
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DILTS MACHINE WORKS DIVISION  
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*Perkins Rolls —  
performing equally well  
in this wide calender  
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engineered and built.*



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HOLYOKE, MASS., U.S.A.

LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD



#### HERE'S PROCESS IN MINIATURE

REX W. HOVEY, Executive Vice President, Oxford Paper Co., demonstrates this Minneapolis-Honeywell graphic control board in brand-new 300-ton-a-day hardwood kraft bleach plant. Entire bleaching process is remotely controlled from this panel, which is actually an animated flow chart of the process.



#### ONE OPERATOR CON- TROLS EVERY PROCESS

PRIDE OF OXFORD's new bleach plant are these three Impco washers, which were the largest made at time plant was built. Each washer weighs 29 tons. STEPHEN MCPHEE, a Bleach Operator, checks the dials on one of the console panels of the washing system.

## How Oxford Upgraded Its Pulp

There's a new \$2,000,000 hardwood kraft bleach plant at Oxford Paper Co.'s mill at Rumford, Me., and according to Walter Holland, mill manager, it's one of the most modern bleach plants in New England and comparable to any existing in the U.S.

This addition to Oxford's Rumford mill is typical of extensive modernization and expansion now going on in New England and especially in Maine. With this new unit, Oxford takes another step forward in its own improvement and expansion program, which since 1946 has totaled over \$28 million.

Pulp produced by this bleach plant is known as Oxford's Harbrite Sulfate and has enabled the company to

make substantial improvements in their existing grades, according to Rex Hovey, executive vice president, who also adds that the door is now open for the development of a wide range of additional products. Among the new grades already developed are Rangeley Offset and a new roto-gravure paper.

These are the outstanding features of Oxford's new bleach plant which a PULP & PAPER editor saw at Rumford:

- (1) A capacity of 300 tons a day of hardwood kraft pulp bleached to high brightness without degradation or loss of strength in pulp fiber.
- (2) The entire operation controlled by a Minneapolis-Honeywell graphic

control board and every process regulated by remote control.

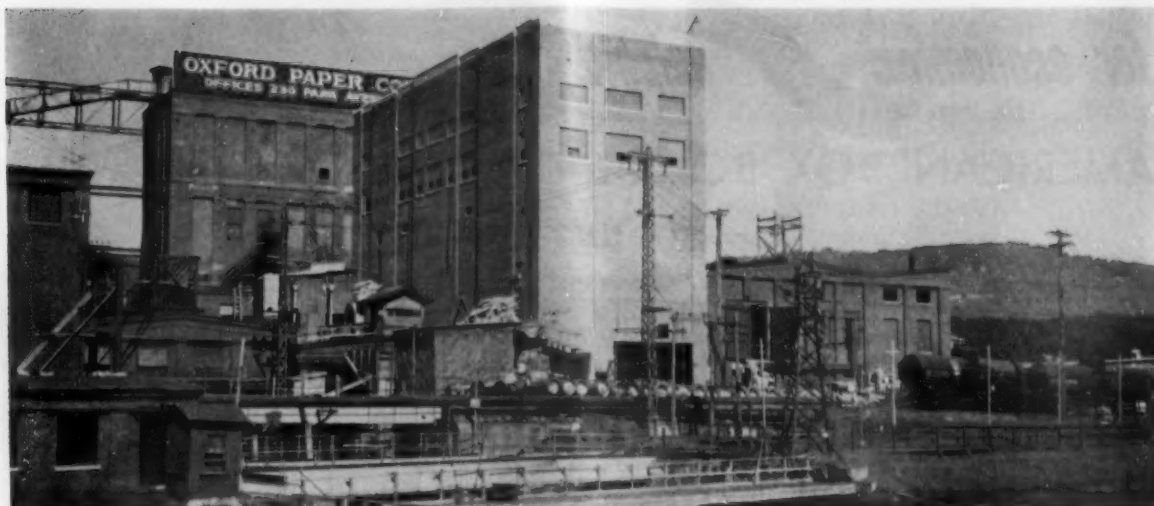
(3) Only one operator and part-time supervision of one foreman required on each shift for the entire plant.

(4) Three Impco washers, 11.5 ft. in diameter and 16 ft. long, weighing 29 tons each, the largest size made when the plant was built.

#### Here Are 4 Stages

The four-stage bleaching system consists of a chlorination tower, 90 ft. high, a high density caustic stage tower and two towers for hypochlorite stages at high density. Screened, unbleached pulp is pumped from the





kraft mill and mixed with chlorine water, prepared at the electrochemical plant and then goes to the chlorination tower. After the chlorine bleach stage, the pulp is piped to an Impco rubber covered vacuum filter for washing and then is pumped to the high density caustic tower. After this latter process, the pulp is again washed and goes through two stages of hypochlorite bleaching.

The Minneapolis-Honeywell graphic control panel, located on the fifth floor alongside the three Impco washers, is in effect an animated flow chart of the process. 15,000 ft. of small copper tubing (mostly  $\frac{1}{8}$  in.), brings visual control to the panel board. From this control panel, the entire process is regulated by remote control. In addition, each washer has its own console control panel.

Here are other interesting facts about this modern bleach plant:

One hundred tons of stock are required to fill the system. Twenty Warren pumps, powered by General Electric Co. motors, handle the total

### IT'S CAPACITY IS 300 TONS

**NEW BLEACH PLANT** at Oxford Paper Co.'s Rumford, Me., mill can bleach 300 tons a day of hardwood kraft to high brightness with degradation or loss of fibers. A PULP & PAPER editor visited this plant and tells why it is considered comparable to any existing in the U. S.

rated capacity of 62 million gallons a day.

Rated chemical usage is 3,200,000 lbs. of chlorine water, 88,000 lbs. caustic solution, 385,000 lbs. of calcium hypochlorite solution in one day.

Seven million gallons of water a day, screened and sand-filtered at the company's filter plant, is used by the bleach plant.

Power is provided by two 1500 kva substations and was the first 60-cycle power used for manufacturing in the mill, and is the beginning of Oxford's long range program to convert its power from 40 to 60 cycle frequency.

Ventilation is provided by seven inlet and exhaust fans and there is a separate 100 cfm compressor for instrument air. A modern elevator gives quick access throughout the five story steel frame building.

Since Nov. 3, 1953, when bleached pulp was first produced by the new plant, it has been running continuously except for scheduled shut-downs.

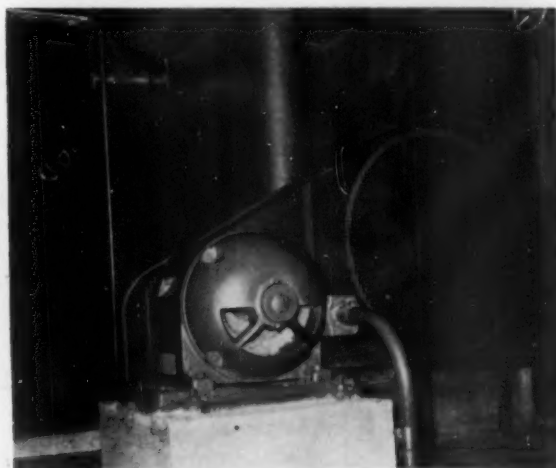
With this new plant, Oxford is now set to maintain its position as a leader in the book paper field, according to Andrew M. McBurney, vice president, sales. He says Oxford's latest production with this new pulp is noticeably brighter and cleaner and also possesses many other superior qualities including greater strength, resiliency and printability.

### Use of Oak to Make Possible Kraft Expansion

Made possible because scrub oak will be used, a \$6,500,000 six-year program to reduce sulfite discharge to the Wisconsin River to less than one-fourth of the former level has been started by Nekoosa-Edwards Paper Co.

Over-all goal is to transfer a greater share of the company's pulp production from sulfite to sulfate process. A new furnace to burn kraft liquor for recovery will start up in early 1956, and new kraft pulping capacity of 50 tons per day will boost this to 100 tons in 1959, while reducing sulfite output to 65 tons from 135 now.

Nekoosa-Edwards will make use of Wisconsin's plentiful supply of scrub oak for pulpwood. Its new method starts with using a chemical to kill the oak tree and loosen its tight-clinging bark, principal previous obstacle to using this species.



**POWERED** by General Electric motors, this Warren pump and 19 others handle total rated capacity of 62 million gals. a day in Oxford's \$2,000,000 bleach plant.

*for economical* **SEMI-CHEMICAL** *pulping*

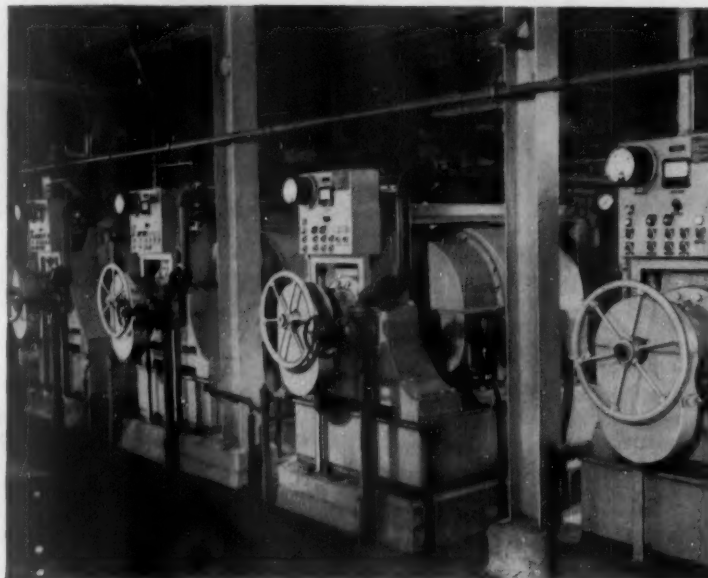
AMERICAN BOX BOARD COMPANY

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SPROUT-WALDRON

36-2 REFINERS

The  
SPROUT-WALDRON  
refiner is the  
leading producer of  
semi-chemical  
pulp



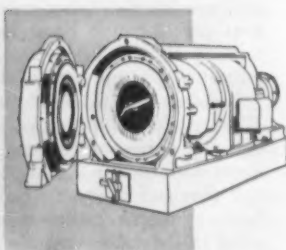
Four of the eight Sprout-Waldron 36-2 refiners at American Box Board Company, Filer City, Michigan. All eight units refine neutral semi-chemical chips for 9 point corrugating board in this most modern semi-chemical mill. Two were installed in 1948, one in 1949, four in 1952 and one in 1954. Repeat orders, such as this, are the best evidence of customers' satisfaction with Sprout-Waldron Refiners.

Single disc design, peripheral control ring  
and rugged construction for...

- high pulp quality
- high capacity
- flexibility of operation
- low maintenance

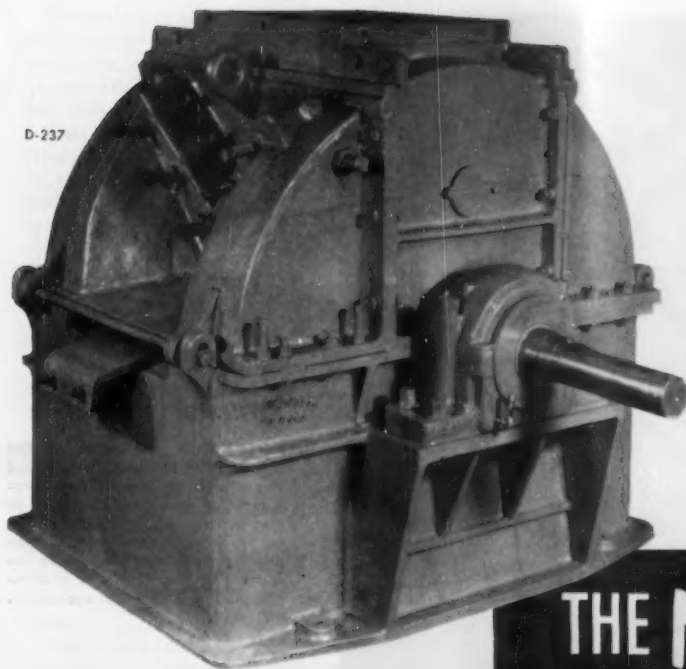
For more information on semi-chemical pulping,  
or any other pulping application, send for our file  
of technical and practical data. Write to  
Sprout-Waldron & Co., Inc., 32 Logan Street, Muncy, Pa.

**S  
W**



*for your pulping problem—*  
**SPROUT-WALDRON**  
**PULP REFINERS**

D-237



Designed and built for Pulp Mills, Lumber Mills, Plywood Mills, Turpentine Mills, Pole Yards, Woodworking Mills, and Wood Converters.



Converts all waste wood, bark, pulp bolt rejects, slabs, edgings, peeler cores, trim ends to high B.T.U. fuel chips.

The Model 145 features quick dismantling and reassembly. It provides continuous performance, taking materials of all sizes as speedily as they are fed into the spout.

The double "anvil" feature with its second cutting knife makes possible up to 40° finer reduction, greater uniformity. Cutting strain is removed, smoother operation promoted, horsepower requirements are less.

And there are other design advantages, too. Features that assure profit benefits for the users of Diamond Wood Hogs. These include:

- Self-aligning, oil lubricated external pillow blocks.
- Full diameter shaft for greater rigidity and economy of maintenance.
- Discs locked to shaft with "QD" taperloc bushings.
- One-piece base casting.
- Designed for rugged service. Diamond Hogs still in daily use after many years of service.

## THE NEW MODEL 145



# WOOD HOG

... the latest addition to an already famous line offering 4 models, with capacities from 6 to 36 tons per hour.

Diamond's manufacturing, engineering, and sales departments now function as a division of Goodman Manufacturing Company, Chicago, fifty-four years a leading manufacturer of heavy equipment for underground mining and tunneling.

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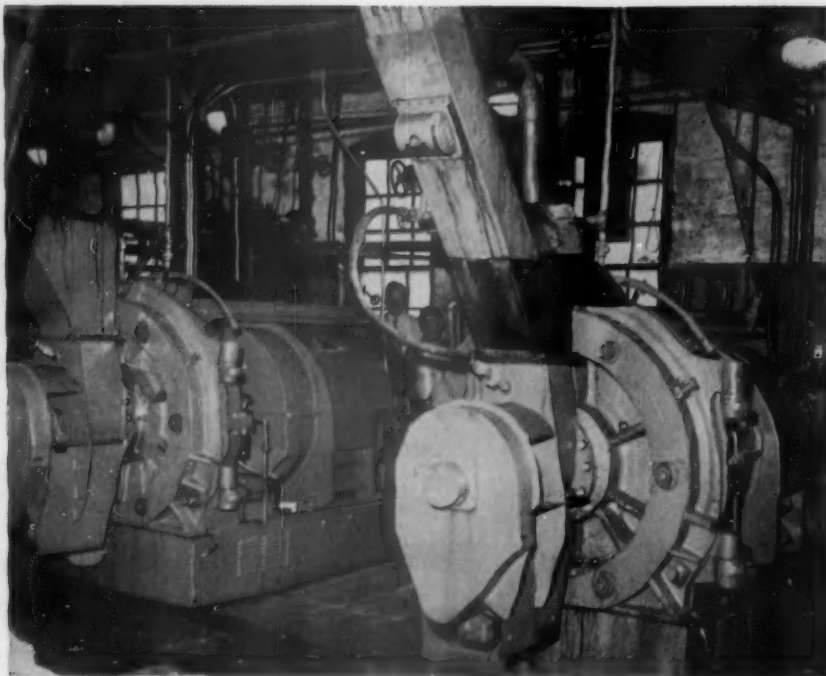
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City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_







#### **MORE POWER TO NEW REFINERS**

THESE TWO SPROUT-WALDRON 450 hp 36-2 refiners have replaced two of 300 hp in processing hardwood for semi-chemical pulp at Otsego Falls, Mich. Four Sprouts in all are used in parallel. Note Eriez filtering equipment above the refiners. Pres. R. J. SUESS is in background (on left) with one of his mill staff.

## **Michigan Semi-Chem Mill Adds Refining And Builds Semi-Outdoor Power Plant**

ONE OF THE FIRST of a long series of exclusive stories on the semi-chemical pulping mills in North America published in PULP & PAPER was the one on the all-hardwoods 9 point, building board and saturating board mill of Otsego Falls Paper Mills,

Inc., in our 1948 Review Number (p. 53).

Three recent important developments have occurred at this mill.

In management, R. J. Suess has become president and general manager, succeeding D. H. Greene, of

Kalamazoo, now chairman of the board. The mill is at Otsego Falls, Mich.

Secondly, extensive improvements have now been made in its semi-chemical pulping system and in board production.

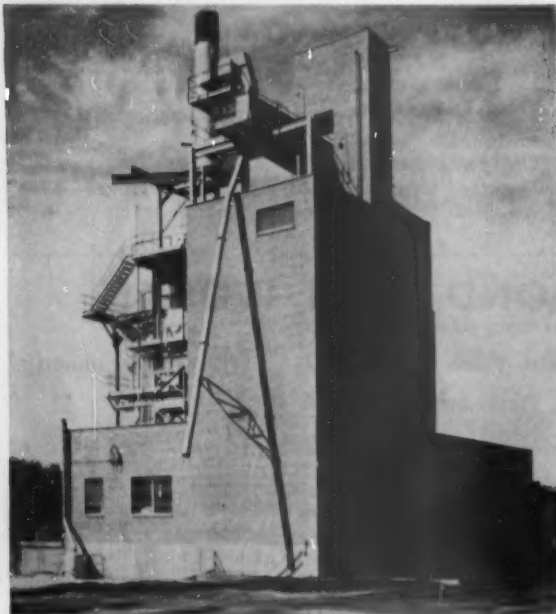
Thirdly, it has a new power plant.

#### **The Power Plant**

Chronologically, this last was the first development, making possible the production line improvement.

A modern entirely new power plant, costing over \$1,250,000, was installed about two years ago. This power plant is of semi-outdoor brick construction. A new Elliott 3500 kw double extraction type turbine generator and a Wickes 650 psig working pressure 750°F boiler carry the entire power and steam load for this mill now making 100 tons a day of board plus some 40 tons of asphalted paper products in a converting department.

The Elliott turbine generates electric power for the mill. Through double extraction, it extracts steam automatically at 130 psi for cooking pulpwood and at 60 psi for drying paperboard. The turbine exhausts to an Elliott divided water box surface condenser.



#### **SEMI-OUTDOOR POWER PLANT**

NEW POWER PLANT for Otsego Falls Paper Mills semi-chemical pulp and paperboard processing cost over \$1,250,000. It includes a Wickes 650 psig boiler that carries all load for 100 tons board and 40 tons converted products.

There is no wall between boiler and turbine room. Central control point has a full view. Floor is red quarry tile and sidewalls of glazed buff tile. It is a clean, neat plant.

This mill was converted from straw and waste paper to make use of the abundance of hardwoods in and around Alleghany National Forest. There is many years' supply close to Otsego, which is 15 miles north of Kalamazoo. Poplar, birch, beech, maple, oak and cherry are used and stacks of it outside the mill are an unusual sight in an area where there are mostly book and fine paper mills, which de-ink and use purchased pulps.

### The Semi-Chemical Process

The bark is used in this operation except for some removed by a screen over which chips pass as they drop into the chip bin. The hardwoods are chipped with bark on them.

Chips are cooked in six new, modern high pressure Biggs rotary digesters designed for 100 lbs. working pressure. These replaced origi-



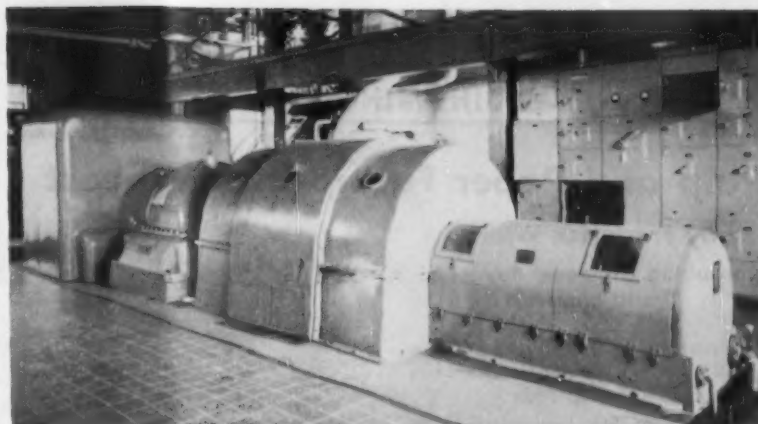
D. H. GREENE (left), new Chairman of the Board of Otsego Falls Paper Mills, Inc., and R. J. SUESS (right), former Resident Mgr. and now President and Manager.

nal rotary digesters described in PULP & PAPER's story in 1948.

Cooked chips are conveyed mechanically to a lineup of four Sprout-Waldron refiners and these include two new 450 hp 36-2 refiners of latest design installed recently. Also in this lineup are two older 300 hp Sprout-Waldron 36-2 refiners and the four refiners operate in parallel.

The semi-chemically reduced chips are reduced to fiber in one pass. Pulp freeness is held in the range of 380 to 420 cc, Canadian standard. Refining consistency is 8 to 10% or above.

The new Sprout-Waldron refiners replaced another pair of 300 hp Sprouts which were being placed on slushed waste paper refining for fiberizing and strength development



### GENERATES POWER FOR OTSEGO FALLS

THIS ELLIOTT 3500 kw turbine generator extracts steam at 130 psi for semi-chemical process and 60 psi for drying paperboard.

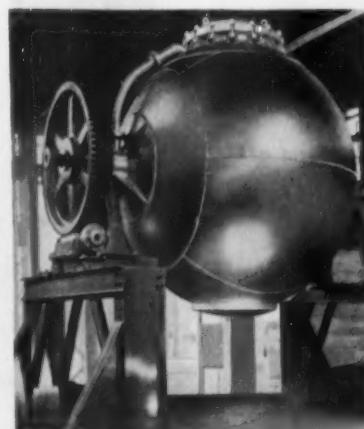
of this stock. In this preparation system, used corrugated boxes are pulped to supplement the semi-chemical hardwood pulp.

The wood used in the semi-chem process ranges from about 4 to 12 in. diameter and the yield is said to be from 75% to 80%.

Emerson jordans further process the stock as it goes to the two Four-drainers, one trimming 102 in. and the other 77 in. Drying rates have been increased with hot air systems and the most recent Ross Engineering installations here are large and long Ross trim conveyors.

### History

This unusual paper company was organized in 1934, taking over an old mill of Allied Paper Mills. It started up on wheat straw and one machine. Asphalted products were made in converting for the Michigan auto industry and building industry. The mill went over to hardwoods in 1945



NEW BIGGS ROTARY digesters have replaced the original ones at Otsego Falls. These have 100 lbs. working pressure for semi-chemical cook.

and a second machine was added in 1946.

Mr. Greene formerly was in business in Joliet, Ill., and before that operated Wisconsin Tissue Mills, Menasha, Wis. Mr. Suess, also originally a Wisconsinite, came to Otsego in 1942 from a North Carolina box plant. Seb Steffes, from the Institute of Paper Chemistry, was Mr. Suess's chief assistant and is now general superintendent.

Two other Wisconsin men, D. G. Turner and Mowry Smith, are part owners and officers.

Don Borden is chief engineer; R. C. Beveridge, purchasing agent and production manager, and J. B. Waters, woodlands manager.

### A Little "UN" Works At Research for Marathon

A little "United Nations" works at research in Marathon's central laboratories at Rothschild, Wis. From Norway came J. R. Salveson, director of central research, from China came Yao Chiang, from Austria came Gunther Nakel, from Finland came Arvo Kautola, and from Sweden, Brigitta Abrahamson. She came as a Scandinavian-American Foundation fellow to pursue lignin studies.

Many other names on the research staff working under Vice Pres. Allen Abrams, reveal Irish, English, German, Dutch and other backgrounds.

### Crossett Safety Record

For second time in its history, Crossett Paper Mills, Crossett, Ark., went past the 1,000,000 man-hours mark without a lost time accident. Employees each received a packaged Wilson's ham as a reward—besides the reward of good health and whole bodies.

## Pulp and Paper Future in Southeast

By Frederick Wierk

Consulting Engineer, Reynolds,  
Smith and Hills

THE HISTORY of the pulp and paper industry in the Southeast has been spectacular and well recorded.

Most observers contemplate the expansion of the industry in the Southeast in terms of the mills involved. They may fail to realize that, besides the increase in the number of these Southern mills, many of them have been significantly increased in capacity since it was started. In many cases, a subsequent increase was considerably greater than original designed capacity.

Space here allotted is inadequate for presentation of such a tabulation. Those who elect to compile one from available year-by-year directories will have higher appreciation of self-obtained data than they might have for statistics prepared by others. It wouldn't be hard to do. And it would

FREDERICK WIERK—  
now in engineering  
firm in Southeast.



reveal how much existing mills have grown.

An important fact about this area is that forestry experts report quite reliably that *there is, in the Southeast, more and better standing pulpwood in sight today than there was in 1932*, when substantially no pulpwood had been cut in that area.

With tangible evidence of what can be accomplished by good forestry, we feel safe in believing that the pulp and paper industry in the

Southeast is destined to grow to considerably more than its present capacity. We believe the foresters have not approached the end of their work.

We know that engineers, like ourselves, can not only design additional capacities but, more importantly, can effect significant improvements in many existing mills, each of which has its own particular problems.

Some of the problems are: Capacity increases, higher yields, use of different wood species, improved economy, pollution abatement, product improvement, improved heat-and-power-balance, material-handling, water-treating, just to mention a few. New mills may not arise as often now as they have, but process improvement and expansions will continue. These jobs often require more designing skill and ingenuity than laying out a new mill on nice clean white paper.

### Frederick Wierk Finally Came South to Stay

Frederick Wierk is consultant and head of the Pulp and Paper division of Reynolds, Smith and Hills, Architects and Engineers, of Jacksonville, Fla.

After graduating from Stevens Institute of Technology in 1923 he was on the staff of Karl A. Lefren, consulting paper mill engineer in New York. In 1929, with the late Alvin H. Johnson, he founded Johnson & Wierk, Inc. as a firm of consulting engineers to the industry.

In 1937 Mr. Wierk's introduction to the Southeast came when he provided the engineering and construction supervision under which National Container's original Jacksonville mill was built.

In 1940, with approach of World War II, Mr. Wierk took leave from the industry to accept assignment as chief engineer in charge of design of Naval Air Stations with headquarters at Quonset Point, for which station he also had charge of design. His organization handled the design of numerous installations in Newfoundland, Northern Ireland, Scotland, England, and elsewhere; and also engineered equipment and facilities used by the Seabees and amphibious armed forces. The versatile Quonset Hut design originated in Mr. Wierk's office at Quonset Point.

During and following the war, he had charge of design of installations in many fields, notably the Merck Streptomycin plant which won a *Chemical Engineering* award and, with other work, earned for Mr. Wierk a Stevens Honor Medallion.

## Chemical Pulping Processes

Chemipulp's high degree of chemical, mechanical and physical control over materials and operations results in maximum plant output, high pulp quality, and low operating costs.

- Circulating Systems
- Tail Gas Towers
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**SITE OF GREATEST CHLORINE EXPANSION IN MIDWEST—ONE OF MANY EXPANSIONS**

Latest addition to chlorine production is this new ultra-modern \$12,-000,000 caustic soda, chlorine and hydrogen plant of Hooker Elec-

trochemical Co., at Montague, Mich. This is third major plant for Hooker—first at Niagara Falls, 1905; second at Tacoma, in 1929.

## How Chlorine Use in U.S. Has Tripled in a Decade

(Written especially for  
**PULP & PAPER**)

**By Albert H. Hooker**

COMMERCIAL CHLORINE was first produced in England in 1850 by costly oxidation of hydrochloric acid. The first electrolytic chlorine was made in

Germany in 1888, followed by the American plants at Rumford Falls, Me., in 1892, at Midland, Mich., in 1896 and at Niagara Falls, N. Y., in 1897.

The following indicates the electrolytic decomposition of purified salt dissolved in water:

$2 \text{ NaCl} + 2 \text{ HOH} + \text{Electric}$   
Sodium Chloride Water Energy=  
117 lbs 36 lbs

$2 \text{ NaOH} + 2 \text{ Cl} + 2 \text{ H}$   
Sod. Hydroxide Chlorine Hydrogen  
80 lbs 71 lbs 2 lbs

The following tabulation, which omits units of less than two tons per day, shows the development of the United States chlorine industry:

Tons Chlorine Per Day			
Year	Est. Capacity	Produced	No. of Plants
1900	40		5
1910	200		11
1920	600		31
1930	830	650	38
1940	2100	1910	43
1950	6200	5710	58
1953	10000	7660	70 (about 20 in pulp mills)
1960		12000 (est.)	

Total caustic production (electrolytic plus lime-soda) exceeds chlorine production. But because chlorine is produced by four different processes, electrolytic caustic soda production is somewhat less than that of chlorine. For example:

Tons Per Day		
Year	Chlorine	Electrolytic Caustic Soda
1941	2194	2036
1945	3266	3094
1948	4493	4403
1953	7660	7556

More than 1,000,000 tons per year of American chlorine was produced for the first time in 1943. This figure was doubled by 1950, and may reach three million tons in 1954. About 41% of this is produced in the South and Southwest, 26% in the Midwest, 23% in the East and Northeast, and 10% on the West Coast.

Ten chemical companies produce

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## ELECTRIC VIBRATORS

**Speed The Flow  
Of Bulk Materials**



**through  
bins,  
hoppers  
and chutes**

On bulk handling jobs where economy and speed are important, Syntron "pulsating magnet" Vibrators assure a positive flow of fine powders or hard-to-handle lumps. Their 3600 controllable vibrations per minute keep bins, hoppers and chutes flowing freely with no arching or plugging.

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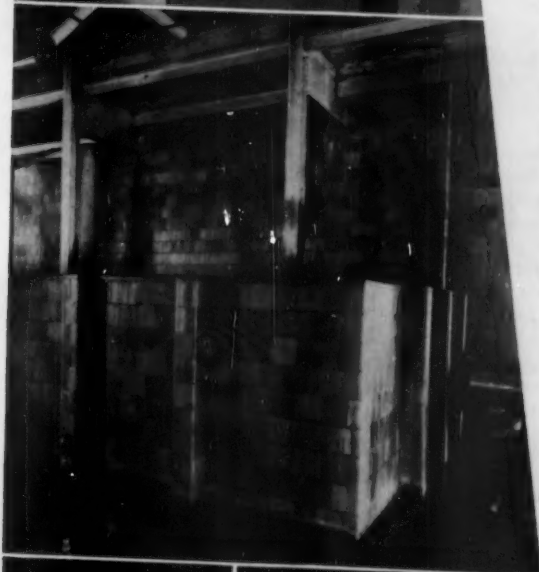
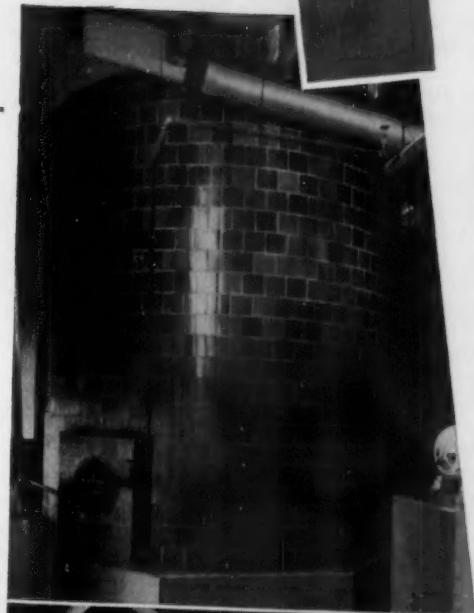
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We are qualified to handle the biggest job you can give us. For example, a job which we recently completed in Florida took 75 carloads of tile.

We give you top-quality service on little jobs too. The installation of a fitting in a Wisconsin bleach tower required the replacement of only three tile — but it received our best workmanship.

It will pay you to investigate Stebbins tile construction as compared with any other type. Prompt service throughout North America.

*Complete Design, Installation  
and Maintenance Service*

SINCE 1884  
Specialists in  
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Installation  
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of Linings and  
Tile Tanks

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Engineering and Manufacturing Company, Watertown, N. Y.

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CANADIAN STEBBINS ENGR. & MFG. CO., LTD. — CASTLE BLDG., MONTREAL, CANADA



over 80% of all United States chlorine. These are Columbia-Southern Chemical, Diamond Alkali, Dow Chemical, Hooker Electrochemical, Pennsylvania Salt, Solvay Chemical, Stauffer Chemical, Wyandotte Chemical, Mathieson Chemical and Westvaco Chemical. Approximately 79% of U.S. chlorine is produced in diaphragm cells.

Ten Canadian plants—six in Ontario, three in Quebec and one in Alberta—produce about 600 tons of chlorine per day, about 53% into pulp and paper. About 90% of the 500 tons chlorine produced daily at Tacoma, Wash., and Portland, Ore., goes to pulp mills in Oregon, Washington, Idaho, British Columbia and Alaska. This is produced by Hooker Electrochemical and Pennsylvania Salt.

Lime-soda caustic production in the U.S. reached a peak of 2100 tons per day in 1948. This rate has dropped to about 1400 tons per day and may eventually be entirely replaced by electrolytic caustic soda. Caustic soda produced in the U.S. is sold to the following markets: Chemicals, 25%; rayon and film, 24%; pulp and paper, 8%; petroleum refining, 8%; soap, 5%; textiles, 4%; export and miscellaneous, 26%.

Fifteen years ago about 50% of all United States chlorine went into pulp and paper. This percentage has now dropped to about 15%. During the

COL. AL HOOKER, who wrote this review of growth of chlorine industry for PULP & PAPER.



same period chlorine going into up-graded chemicals has increased from 15% to 80%, including solvents, anti-freeze, weed killers, insecticides, plastics, refrigerants, gasoline and sanitation.

U.S. chlorine production is believed to be more than twice that of the balance of the world. The principal other producers are Germany, Japan, England, France, Canada, Italy, Russia, Sweden, Belgium, Holland, Finland, Switzerland, Spain and Norway.

For the past 25 or 30 years chlorine has had an average growth of about 12% per year in the U.S. This has also held true since 1939. While it does not seem likely that such a large percentage-wise increase will be maintained under prevailing conditions, very substantial growth seems indicated for the future.

## Name Project Manager for Alaskan Timber

Pacific Northern Timber Co., which recently purchased 3 billion board feet of U.S. Forest Service timber in Wrangell, Alaska area on 50-year contract, has named C. D. Johnson, Jr. project manager of the organization. This Alaskan firm, with offices at Wrangell and Portland, Ore., plans to construct a sawmill, along with other wood processing facilities, and a pulp mill for utilizing the purchased timber.

Mr. Johnson, who joined Pacific Northern's headquarters offices in the Henry Building at Portland August 1, until recently functioned as assistant to the vice president in charge of production, Georgia Pacific Plywood Co., and was previously comptroller for C. D. Johnson Lbr. Corp., now owned by Georgia Pacific.

The USFS-Pacific Northern contract specifies purchase of hemlock (largest volume of species represented) at \$2 per M, spruce at \$3.20 and cedar at \$1.70—the prices subject to negotiation in five years.

The contract also calls for submitting general sawmill equipment and buildings plans by end of this year, placing orders for sawmill equipment by July 1, 1956, having sawmill and other woodworking facilities of at least 40 million feet per year capacity in operation by end of 1957, and installing a pulp mill of at least 80-ton daily capacity and having it in production by end of 1962, according to C. Girard Davidson, secretary of Pacific Northern Timber Co.

Other officers of the organization: Pres. Robert F. Johnson, who is also president of C. D. Johnson Lbr. Co.; Vice Pres. Ralph E. Williams, Jr.; Treas. Bill Crooks; and Michael E. Mongle, Alaskan director.



## NEW OFFICERS FOR E-N

ALBERT A. NYITRAY (left) and A. W. RABKE (right) have been elected officers of Eastwood-Nealley Corp., manufacturers of Four-drinier wires and wire cloth. Mr. Nyitray, formerly Sales Mgr., becomes Vice Pres. in charge of Sales. Mr. Rabke, formerly company accountant, becomes Treasurer.

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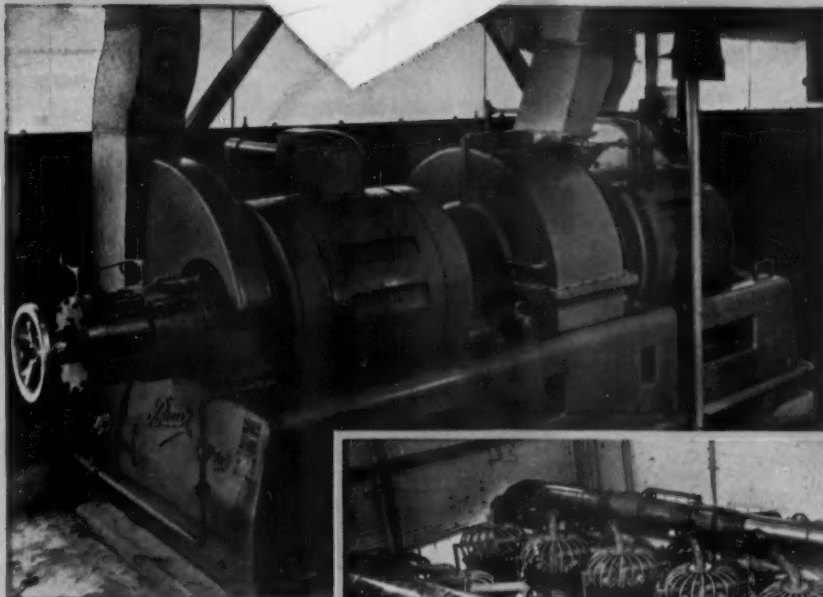
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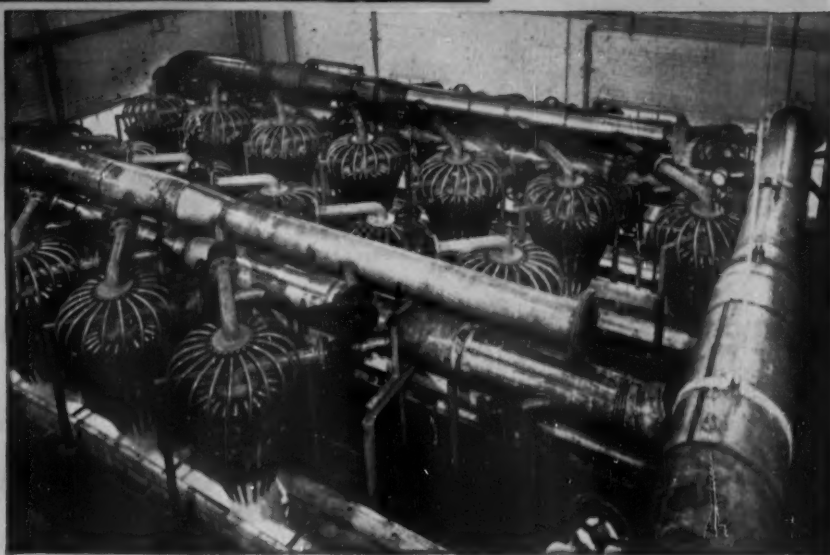


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**LOBLOLLY STAND GROWING IN ARKANSAS**

This picture by PULP & PAPER'S Southern editor shows a heavy shelter-wood of loblolly pine of sawtimber size alongside U. S.

Highway 270 near Prattville, Ark. The understory got started four years before; overstory was partially thinned 2 years before photographed.

## The Loblolly Pine of the South Versus

How DO THE YIELD and increment of natural, unmanaged young-growth Douglas fir compare with that of loblolly pine? This question often arises in discussions of the pulp and paper industry of the Pacific Northwest and of the South.

It provoked considerable interest at the American Paper and Pulp Association tour of Pacific Northwest forests in Sept. 1953. To give a reasonable and down-to-earth answer to the query, estimates have been made for Douglas fir in the Puget Sound region of Western Washington and for loblolly pine in Southwestern Arkansas.

Care has been taken to give a conservative estimate of potential and actual yields for both species under average forest and site conditions of the two regions.

Douglas fir (*Pseudotsuga menziesii* (Mirb.) Franco) is the principal for-

**By Norman Worthington**

**NORMAN WORTH-  
INGTON'S** Forest  
Service career has  
been divided be-  
tween South and  
West.



Selected to write this article because of his long experience in both Arkansas and Washington States with U.S. Forest Service. Now with Puget Sound Research Center, Pacific Northwest Forest & Range Experiment Station.

est tree in the Puget Sound area, comprising 40% of the sawtimber volume. The tree grows in pure, even-aged stands after fires, cutting, or any complete removal of the forest. It is well adapted to the shallow, coarse soils of the region and is the predominant species at lower elevations, except in areas of high water table and shaded north slopes. The tree produces little clear wood in the first 100 years because of persistent branches, which cling to the bole long after they are dead. Douglas fir is highly resistant to insects and decay.

Loblolly pine (*Pinus taeda* L.) is the most important of the Southern yellow pines. It grows chiefly on the more moist sites, where the water table is close to the surface or where soil moisture is readily available. The tree clears itself rapidly of dead limbs; on rotations of 50 years at least one-quarter of the wood is knot-free.





#### HOW DOUGLAS FIR GROWS IN WEST

This is view of 20 to 25 year old growth in the St. Helens Tree Farm of Weyerhaeuser Timber Co., where Douglas fir farm plots

range in ages from young 15 year old firs to 200 to 300 years old. This has been naturally reseeded. Mt. St. Helens—10,000 ft.—in background.

## the Douglas Fir of Pacific Northwest

The tree springs up on exposed mineral soil, such as abandoned fields. It is subject to bark-beetle and sawfly attacks, but not seriously so.

Douglas fir and loblolly pine reach full development in the areas compared, namely, Puget Sound and Southwest Arkansas. Management in these two zones is more intensive than elsewhere within the respective ranges of the species, mainly because of application of research findings and existence of better markets. However, Southwest Arkansas is considerably ahead of Puget Sound in the application of intensive forest management.

#### What are Problems of Yield?

The two regions differ in the relative importance attached to forest increment. In Southwest Arkansas all cutting is from second- or third-

growth forests; on Puget Sound the main reliance (84% of the harvest) is on virgin timber. Hence, in Arkansas the rate and availability of increment are a critical concern of the forest industry. Industry in the Puget Sound area, not yet dependent on young-growth forests, places greater emphasis on the current volume and accessibility of stands that have attained merchantable size and quality.

However, the end of the virgin timber is in sight, and a shift to young-growth stands of fairly recent increment can be forecast. Soon the interests of both regions will be identical.

An important consideration in any yield comparison is a common unit of measurement. A cubic foot of wood should mean the same thing in all regions, but, strangely, this is not always so. Pulpwood utilization to a 3-in. top is common in Arkansas, but utilization is nearer a 6-in. top in the

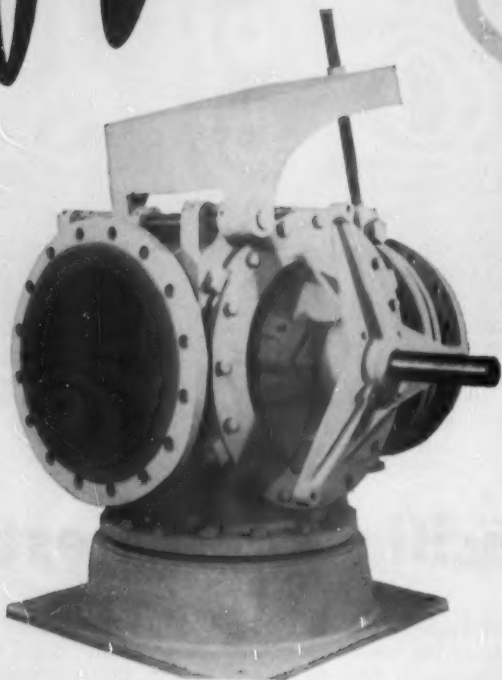
Puget Sound area. The disparities between cubic and board foot measurements of the two regions reflect the closer utilization of the tree in Arkansas. In this analysis, where yield and increment are compared directly, all units have been adjusted to as near a common standard as possible.

These comparisons of growth and yield are meant to apply to *average* conditions on average sites for each region. Cite index 140 feet (height of trees at age 100 years) has been chosen for Douglas-fir, and site index 85 feet (height at age 50 years) for loblolly. These site estimates are average for both species and areas.

Rotation, or time required to establish and grow timber crops to a specified maturity, must be set for each species. This period is not the same for the two species because growth habits are different. The rotation giving the greatest mean annual incre-

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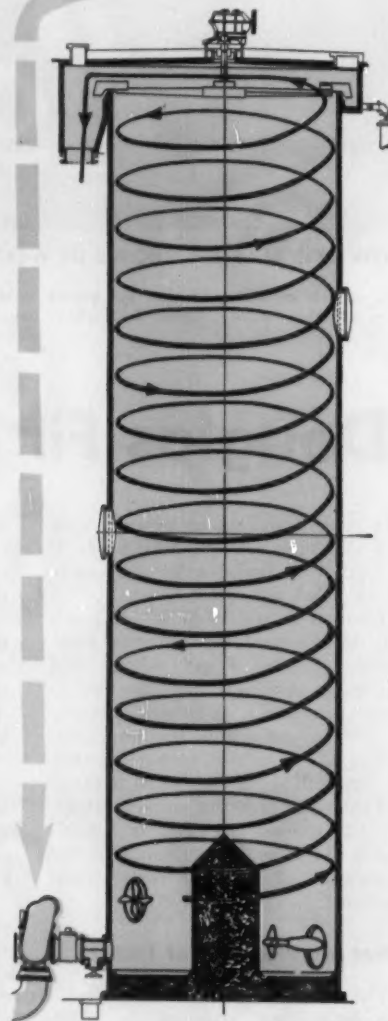
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CS-a

## The Story Behind This Exclusive Article

PULP & PAPER was the only publication to take a part in a tour of the practical and successful Tree Farms of the Far West, conducted nearly a year ago by the American Paper & Pulp Association and the U. S. Pulp Producers Association.

This magazine, in its exclusive report (Nov. 1953 issue) recorded that for about 40 top level executives of leading American pulp and paper companies, there was one particular controversial issue.

Presidents or top officials of Southern and Far Western companies engaged in a running, friendly, debate for three days as to whether more fiber per acre grows in the Southern or Far Western woods. Facts were shaded with opinion and regional loyalties, as they generally are in such debates.

(During the tour, Weyerhaeuser foresters said they grow an average of 600 bd. ft.—1 1/5 cords—per acre per year of Douglas fir for 80 yr. cycles. On a joint tree farm—Weyerhaeuser, Simpson and others own it—1.2 to 1.4 cords per year growth was reported. Crown Zellerbach foresters said their predominantly hemlock stands average 750 bd. ft.—1 1/2 cords—per acre per year for 60 year cycles.)

One speaker at an outdoor session at Mason Lake was Norman Worthington, of the U.S. Forest Service, Shelton, Wash. Because of his scientific approach to the subject, and because he served in the South, too, PULP & PAPER invited him to write an article on the subject. It appears here—an authoritative, unbiased comparison of the most important tree of the Far West vs. the most important of the Southern yellow pines.

ment—M.A.I. (total volume divided by total age)—is generally used in yield comparisons. Yield tables indicate that a rotation of 70 years for Douglas fir and 35 years for loblolly pine are most efficient for pulpwood, while 100 years and 50 years are best for sawtimber. Rotation age for loblolly pine is one-half that of Douglas fir for both cubic and board feet, chiefly because loblolly pine has a faster initial growth rate and a shorter life expectancy.

### Fir vs. Pine—in No. of Stems, Height, Diameter

Douglas fir is more tolerant than loblolly pine, so that an acre will support approximately twice as many stems. For example, at age 25 years the normal stand of Douglas fir has 1,160 stems of all sizes per acre compared to 600 for loblolly. More significant for a pulpwood rotation, however, would be a comparison using only the trees 4 in. in diameter and larger, drawn from standard yield tables for both species<sup>1</sup> (Table 1).

By this standard, Douglas fir outnumbers loblolly only 600 to 540 at 25 years, but Douglas fir increases its advantage with increasing age.

At 50 years it has 53% more trees than pine, and at 100 years it outnumbers loblolly 2 to 1. This ability of Douglas fir to grow in denser stands than loblolly after age 25 years and still maintain a more rapid height and diameter growth is one of the chief reasons for its greater yield.

<sup>1</sup> McArdle, R. E., Meyer, W. H., and Bruce, Donald. The Yield of Douglas-fir in the Pacific Northwest. U. S. Dept. Agric. Tech. Bull. 201. 1949 (Rev.)

Volume, Yield, and Stand Tables for Second-growth Southern Pines. U. S. Dept. Agric. Misc. Pub. No. 50. 1929.

Table 1.—Trees per acre 4 in. in diameter and larger, Douglas fir vs. loblolly pine.

Age years	Douglas fir number	Loblolly pine number
25	600	540
35	525	375
50	360	235
70	230	165
100	185	90

Loblolly pine is taller than Douglas fir until age 30, then falls behind (Fig. 1). The initial advantage of loblolly pine is due to its ability to root quickly and make much more rapid growth in the early years. During this period Douglas fir makes little height growth but develops a deeper root system which provides protection against summer droughts. It is not uncommon for loblolly to average 20 ft. tall compared to 10 ft. for Douglas fir at the end of the first 10 years.

However, after 30 years, Douglas fir draws rapidly away until at age 70 it is 25% taller than loblolly, and at 100 years, 40% taller. This trend is evident in current annual height growth (Fig. 1). At 25 years Douglas fir is growing 2.7 ft. annually, compared to 1.8 ft. for loblolly. Height growth of both species falls off at about the same rate, until at age 100 years Douglas fir rate is 0.6 ft. per year, compared to 0.1 ft. for pine.

Average diameters follow nearly parallel trends for the first 50 years (Fig. 2). Loblolly averages approximately 2 in. larger than fir at 25 years and 1 in. larger at 55 years. At 75 years the average diameters for the two species are identical, and thereafter Douglas fir is larger. The rapid initial diameter and height growth of loblolly is, of course, the chief reason

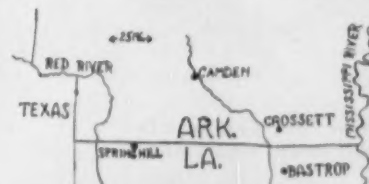
## PULPWOOD SECTION

why shorter rotations are more efficient, making possible earlier utilization.

In terms of diameter growth per decade the two species grow at the same rate (2.6 in.) at age 25 (Fig. 2). Before age 25, loblolly grows faster, making a larger tree than fir at this age. After 25, Douglas fir grows faster than pine, although growth rates for both species decrease steadily. At 70 years, the fir rate is 1.6 in. per decade, compared to 1.1 for pine; at 100 years it is 1.1 in. compared to .8. Since these rates are for dominant and co-dominant trees they are higher than the average for all trees.

The trends in diameter and height growth are similar; however, loblolly's initial advantage in diameter growth is more marked and persists longer than its height advantage.

The height and diameter data used in these comparisons are taken from the standard yield tables for both regions. They may appear conservative to the informed or experienced forester. One should remember, however, that these tables are computed with data from fully stocked natural stands for average site conditions previously defined; more rapid growth is



### WHERE LOBLOLLY PINE REACHES ITS FULL DEVELOPMENT

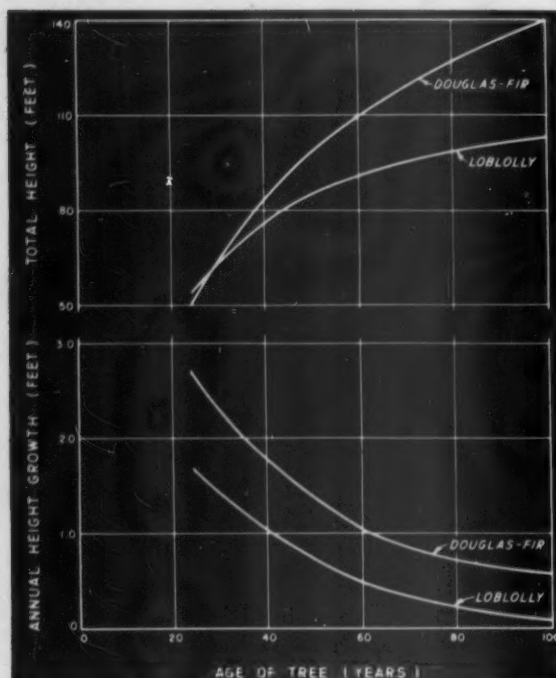
Map shows Southern Arkansas area where data was obtained on Loblolly Pine.



### WHERE DOUGLAS FIR REACHES ITS FULL DEVELOPMENT

Map shows Western Washington area—the Shelton-McCleary area—where Douglas fir records were obtained.





#### HOW HIGH THEY GROW

Figure 1—Total height and annual height growth for South's Loblolly Pine (dominant trees only) vs. Pacific Northwest's Douglas Fir (dominant and co-dominant trees). Data from yield tables for both species.

usually observed in understocked natural stands, in managed stands, in plantations, or on better sites.

#### How They Compare In Increment and Yield

**Cu. Ft. Volume**—The yields of the two trees in cords are compared for two levels of management, namely: (1) Theoretical (yield tables); and (2) forest-run estimates for large representative sawtimber areas of the two regions covered in a nation-wide survey made by the Forest Service.

Analysis of these yields should give a good idea of the capabilities of the two species. Different mensurational and utilization standards in the two regions, as well as inability to secure data for the exact rotation age, make it impossible to compare the yields of the two species precisely, but the figures given (Table 2) are reasonably comparable.

Yield table examples show that the mean annual increment of Douglas fir over a 70-year rotation is 22% greater than that of loblolly pine in a 35-year rotation. The yields are theoretical in the sense that they would probably not be achieved over a large area except under a high level of management.

Forest Survey data show the average volume of growing stock and

Table 2.—Yield in cords per acre of Douglas fir and loblolly pine for various forest conditions.

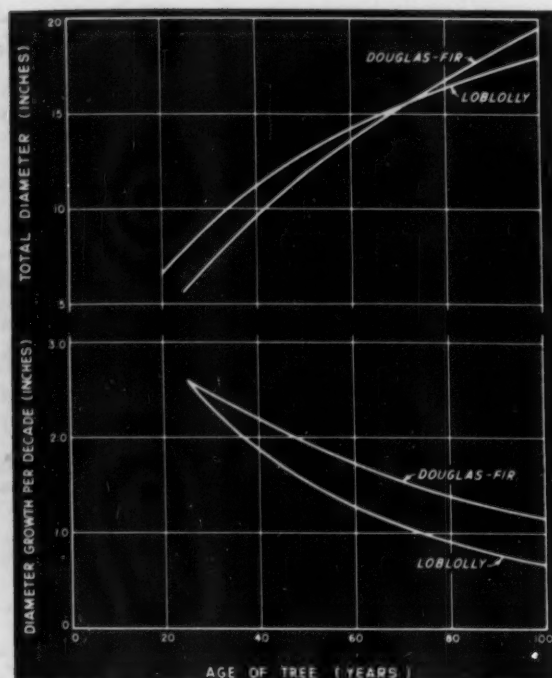
Type of estimate		Douglas fir	Loblolly pine
<b>Yield Table</b>			
Age	years	70	35
Total yield	cords	120	49
Annual increment	cords	1.72	1.41
<b>Forest Survey<sup>1</sup></b>			
Growing stock	cords	63	15
Annual increment	cords	1.06	.81

the estimated current increment for large forest sawtimber areas in the two regions. Estimates indicate that existing stands of Douglas fir are growing at the rate of 1.06 cords per acre, which is 31% above the .81 cord estimated for loblolly. The actual growth of both species represented by these figures is far under the potential, yet anyone familiar with forest conditions of the two regions will agree that such low productivity is only too common.

Although, potentially, Douglas fir should out-produce loblolly only about

<sup>1</sup> Douglas fir: Average of Clark, Cowlitz, Lewis, Mason, Grays Harbor counties, Washington. Unpublished data from Forest Survey, Pacific Northwest Forest and Range Experiment Station, Portland, Ore.

Loblolly: Forest Statistics for Southwest Arkansas, Forest Survey Release 63, Southern Forest Experiment Station, New Orleans, 1950.



#### HOW WIDE THEY GROW

Figure 2—Total diameter and diameter growth per decade for South's Loblolly Pine and Pacific Northwest's Douglas Fir. Data for Loblolly Pine from yield table. Data for Douglas Fir adjusted from yield table.

22%, actually the average Douglas fir stands are growing over 31% faster than the pine stands. The chief reason for the poor showing of loblolly is, of course, that Southwest Arkansas forests have been more heavily cut than the forests of Puget Sound, and far too little growing stock is left upon which growth may be added.

**Bd. Ft. Volume**—Rotations required to obtain maximum bd. ft. growth are longer than for cu. ft. growth. The minimum-size tree required to produce sawlogs is larger, and hence older, than the smallest pulpwood tree. Since maximum increment by any measure is not obtained until nearly all trees pass the minimum-size limit, it follows that bd. ft. rotations are longer than cu. ft. rotations.

The theoretical bd. ft. yield for Douglas fir at 100 years can be compared with loblolly yield at 50 years (Table 3). These rotations are close to the age of culmination of mean annual increment. Standards of measurement in this comparison are the same for both species. In the comparison of Forest Survey data no attempt has been made to adjust either to theoretically best rotations or to strictly comparable standards of measurement. The figures given, however, are representative of the performance of the two species as they grow in their own regions. They also reflect the dif-

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## PULPWOOD SECTION

ferent degrees of utilization practiced in the South and in the Northwest.

Bd. ft. annual increment for Douglas fir taken from the yield table exceeds that of loblolly pine by 41%. This is in contrast to the 22% found for cu. ft. increment. The initial rapid growth of pine brings its total volume productivity close to that of fir for shorter rotations, but this advantage is largely lost in the longer bd. ft. rotation. In fact, the ability of Douglas fir to maintain a satisfactory growth rate is another reason why it out-produces Southern pine.

The difference between the two

Table 3.—Yield in bd. ft. per acre of Douglas fir and loblolly pine for various forest conditions.

Type of estimate	Douglas fir	Loblolly pine
<b>Yield Table</b>		
Age years	100	50
Total yield bd.ft.	85,703	30,318
Annual increment bd.ft.	857	606
<b>Forest Survey<sup>1</sup></b>		
Growing stock bd.ft.	27,685	5,396
Annual increment bd.ft.	461	327

<sup>1</sup> Douglas fir: Average of Clark, Cowlitz, Lewis, Mason, Grays Harbor counties, Washington. Unpublished data from Forest Survey, Pacific Northwest Forest and Range Experiment Station, Portland, Ore.  
Loblolly: Forest Statistics for Southwest Arkansas, Forest Survey Release 65, Southern Forest Experiment Station, New Orleans. 1950.

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species over large sawtimber areas sampled by the Forest Survey is the same as the theoretical difference in yield. Estimated increment of the average Douglas fir stand is 461 bd. ft. per acre per year, of loblolly pine 327 bd. ft., an advantage of 41% in favor of the Puget Sound species.

### What It Adds Up To

Comparison of cu. ft. and bd. ft. yields shows that Douglas fir produces greater yield and increment than loblolly pine, but the pine produces earlier returns and more clear lumber.

The greater number and taller stems per acre account for the greater yield of Douglas fir. The larger diameter gained during its first 25 years enables pine to produce a commercial yield earlier than Douglas fir.

Pulpwood yields, based on the best average annual increment, are 20 to 30% greater for Douglas fir. Bd. ft. yields of Douglas fir are about 40% more than Southern loblolly pine.

### 2nd Year Interplanting May Be Dangerous

Interspersed plantings in the second year of a plantation run the risk of being out-paced by original trees, according to a study of slash pine in Georgia by the Southeastern Forest Experiment Station.

In 1945, several fields were planted to slash pine at 15 by 15 ft. spacings. Afterwards the owner decided open spaces were uneconomic and planted in between, making spaces 7 1/2 by 15 ft. The interplants are being crowded more and more, and heavy mortality may be expected.



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Oliver Corp. has introduced this new, all-purpose tractor, said to be the most powerful of its type. Called the Super 55, the tractor is a 4-wheel, adjustable tread type, classed as a 2-3 plow tractor. The Super 55 has a choice of two engines—a gasoline tractor with 7.0 to 1 compression ratio, or full diesel engine—and a 6-forward-speed transmission, including a super low gear.



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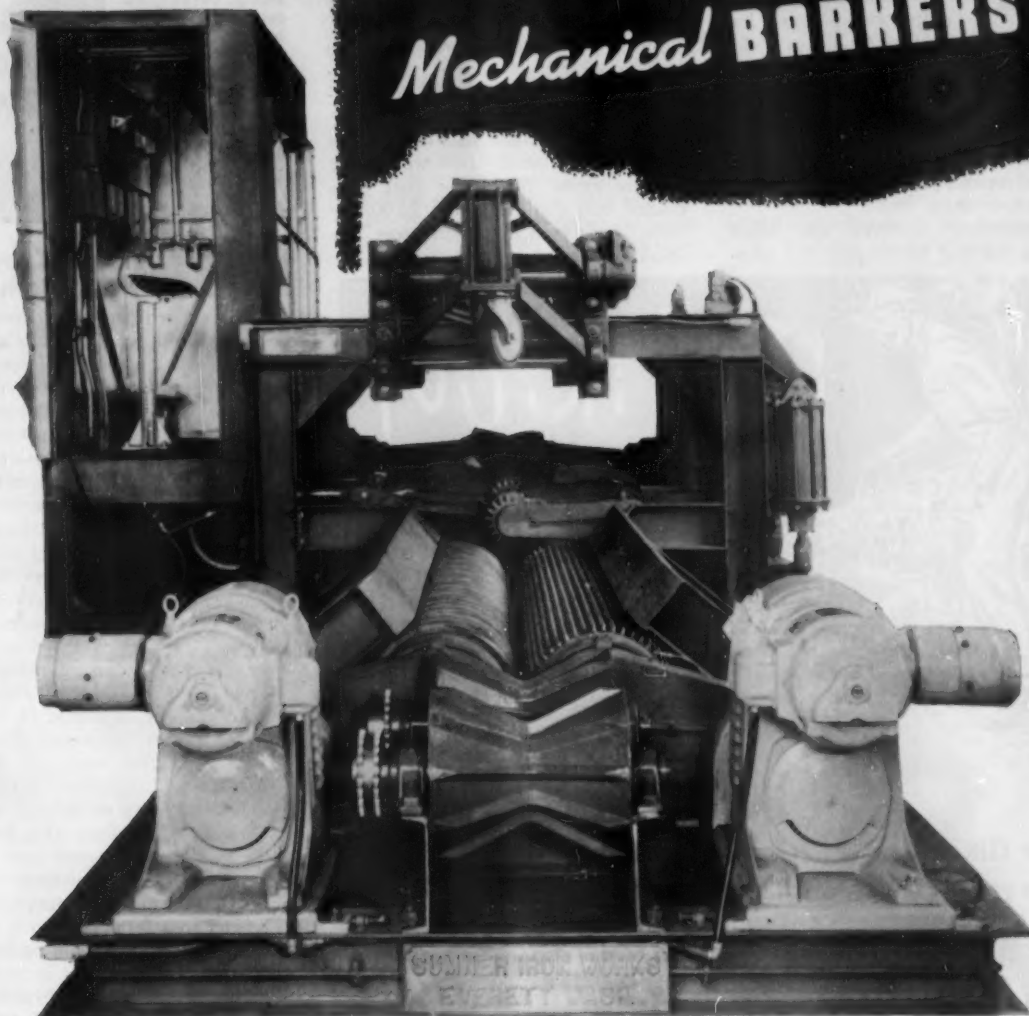
*On this blockpile, it's a Lorain-50 with pulpwood grab. Mounted on crawlers, it keeps busy on loading operations from pile to conveyor.*



**LITTLE RAKE**

*Another Lorain Rake, in the popular TL-25 "Series", shown unloading cars. Note how Rake arm reaches over car — cleans it off completely — high production — minimum car damage. Write for literature on Lorain Rakes and other types for pulpwood handling!*

*Sumner* PRESENTS THE LATEST IN ...  
*Mechanical BARKERS*



**BURNT RIVER MECHANICAL LOG BARKER**

Here at last is an efficient and economical log barking device that requires NO WATER, and a minimum of power, yet effectively removes ALL THE BARK INCLUDING THE CAMBIUM LAYER from Pine, Larch, Fir, Spruce, Cedar, White Fir, Alder, Cotton-wood, Hemlock and Douglas Fir. . . . No other mechanical barker has equalled this outstanding performance.

Two distinct types of the Burnt River Mechanical Barker are now available . . . The PULPWOOD TYPE for small diameter 8' logs, the SAWMILL TYPE for large diameter, 12' to 42' logs.

Sumner has been building log and slab barking equipment,

both mechanical and hydraulic, longer than any other manufacturer. . . . these years of experience and close contact with all phases of barking problems qualify us to speak with authority on the proven capabilities of the BURNT RIVER MECHANICAL BARKER.

Our newest development . . . the BURNT RIVER MECHANICAL BARKER has merited exceptional interest since it was first installed at the Burnt River Lumber Co., Baker, Oregon.

Further information on this Barker will be gladly furnished upon request.

Designers and  
 Builders of  
 Pulp and Paper  
 Mill, Sawmill,  
 Boardmill and  
 Shingle Mill  
 Equipment

ESTABLISHED 1892

**SUMNER IRON WORKS**

EVERETT, WASHINGTON

In Canada: Canadian Sumner Iron Works, Ltd., Vancouver, Canada



## PULPWOOD SECTION

### APA Issues New Training Manuals

First in a series of revised training and safety manuals, in package form, for pulpwood operators, has been issued by the American Pulpwood Assn. The initial revision covers the basic training manual, Training Guide No. 1 on foreman training and the foremen's notebook. They will be followed by Training Guides 2-3-4 on the use and care of axes, handsaws and power saws.

Outstanding features are latest proven training techniques for man-

agement, embodying clear text and illustrations.

The need for these manuals, according to William C. Bromley, executive secretary, APA, was keenly realized during World War II. A need still exists, he says.

In introducing the new booklets to pulpwood management, the pulpwood industry is compared to farming.

Pulpwood activity in the U.S. involves more than 250,000 workers at various times; the major part conducted under an estimated 25,000 or more independent contractors or small business operators.

## HEADS AM. HOIST SALES

RAY J. DERVEY, appointed Gen. Sales Mgr. of American Hoist and Derrick Co., according to Pres. John E. Carroll, his predecessor in that post.



## Hardwood Farms Keep Hawkesbury Mill Going

One big company that knows the value of farm woodlots is Canadian International Paper Co. Tree farms saved one of its mills from closing.

Several hundred woodlot owners, guests of Canadian International recently at the company's demonstration Harrington Forest Farm, were told by Vernon E. Johnson, president of C.I.P., that without touching the Crown lands, 25% of wood needs of the Canadian pulp and paper industry could probably be supplied forever by farmers and small owners, with good management.

Mr. Johnson spoke following presentation by William Cottingham, Quebec minister of mines, of 13 tree farm certificates to owners of woodlots. Mr. Johnson was one of the recipients in recognition of a 150 acre woodlot which he owns and administers. Mr. Cottingham also holds a certificate for a 520-acre tree farm. "We can supply our Hawkesbury mill at its present rate of consumption forever from tree farms within a radius of 50 miles of the mill," said Mr. Johnson. He recalled that in 1947 the Hawkesbury dissolving pulp mill, half way between Montreal and Ottawa, faced a shutdown because it has consumed most of the softwoods in the area.

"Our research laboratories in Hawkesbury came up with the idea of making dissolving pulp from local hardwoods, which were ample," said Mr. Johnson. "The mill was transformed at a cost of more than \$8 million. The company owned 2,000 acres in the district, and added another 1,000 acres by buying abandoned farms, and also taught farmers the tree farm business."

## New Woodroom at Rapids

Consolidated Water Power & Paper Co. will construct a new \$1,300,000 woodroom at its Wisconsin Rapids Division, incorporating latest developments in wood preparation processes.



# FREE TRYOUT

## ON YOUR OWN STAND

# CLINTON CHAINSAWS

Your CLINTON dealer will furnish the saw and the fuel to introduce you to the fastest cutting one-man gasoline chainsaw built



No. CS323  
*now only*  
**\$179 50**  
without guide bar and chain  
FOB CLINTON, MICHIGAN

The heart of the CLINTON CHAINSAW is the world famous CLINTON engine

Has the big chainsaw features. A full weight tool—not a toy. Special diaphragm fuel pump! You cut from any position. New on-off switch for complete power control. Safety-sight guide! Belt drive! Split second swivel! A complete family of Clinton Chainsaws for you to choose from. Clinton Engine Replacement Plan lets you change power units at less cost. Mail for giant 3-color folder. See your Clinton Dealer for free tryout.

IMMEDIATE SERVICE AND FACTORY PARTS EVERYWHERE

CLINTON MACHINE CO.

Chainsaw Division, Dept. 53-A, CLINTON, MICHIGAN  
Engine Division at MAQUOKETA, IOWA  
Outboard Division at CLINTON, MICHIGAN



Over 2,500,000  
Clinton Gasoline  
Engines Now in Use  
Throughout The World!

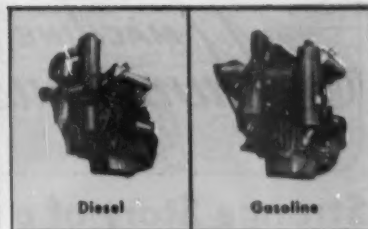
## Introducing the Brand-New

# OLIVER SUPER 55



**Takes all equipment—  
front— rear— or side-mounted!**

The built-in hydraulic 3-point hitch on the Super 55 operates a wide choice of Oliver and other simple, low-cost tools. Its husky, one-piece frame makes a convenient, solid foundation for front- or side-mounted equipment.



**Most powerful  
tractor of its type!**

Not only the most powerful, but a huskier, heavier tractor and the only one to offer a choice of diesel or gasoline power. Two modern, low-friction, 4-cylinder engines designed to keep your costs at an absolute minimum.



**the all-new,  
all-purpose tractor  
with everything!**

Here is the tractor you have been waiting for. A tractor with all the features you have wanted...all the features that make other tractors its size out-dated! Waiting for diesel power? Super 55 has both diesel and gasoline. Want a tractor you can use anywhere, with any kind of attachment? Try the Super 55...its greater power, weight...its compact, maneuverable size...and its ability to take front-, rear- or side-mounted tools gives you versatility never before had in any tractor!

See and drive the new Super 55. Stop in at your Oliver Distributor, today!

**SIX FORWARD SPEEDS**—with a new super low of 1½ miles per hour. Gives greater power at slow speeds, less chance of engine stall-out.

**LOW AND COMPACT**—only 4½ feet high. 6-foot wheel base makes tight turns easy in close quarters.

**BUILT-IN HYDRAULIC SYSTEM**—internal control for 3-point hitch equipment. External control for mounted equipment.

**DOUBLE-DISC BRAKES**—give four times the braking surface, yet require half the foot pressure of band brakes.

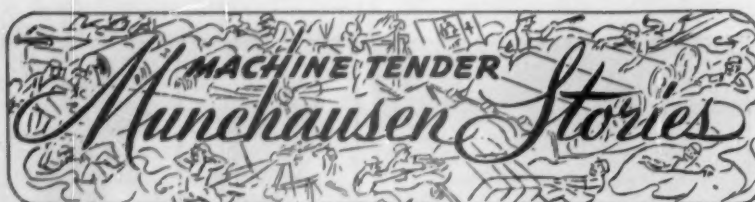
**EASY STEERING**—recirculating ball-type steering reduces operator fatigue. Makes steering in soft ground much easier.

**INDEPENDENT REAR PTO**—constant-running power take-off is independent of tractor clutch. No power breaks when shifting gears!

**THE OLIVER CORPORATION**  
400 West Madison Street, Chicago 6, Illinois



a complete line of industrial wheel and crawler tractors



## Strange Story of a Mill on a Desert

ONCE THERE WAS a flourishing paper mill located on what was then known as "the Great American Desert," a vast, wide, bleak expanse devoid of moisture, plant or animal life.

But . . . in the center of the desert was located a well of natural gas, which contained a small amount of a rare radio-active element. Scientists of that day have left but meager records of this element, but modern physicists have synthesized the material and discovered it gives off the rare "Epsilon Rays." These Epsilon Rays, though relatively harmless to animals, excite plant life to fantastic growth rates. In one experiment, a single cell of plant algae exposed to the rays multiplied to fill an entire laboratory room in a matter of seconds!

Getting back to our story, we now see this ancient desert as a huge area completely devoid of life of any kind. If given moisture, a few acres in the center would be potentially capable of growing plants on a scale never before seen.

The gas well was unwittingly discovered by an old prospector who set out with his burro across the desert to search for precious metals. The burro's coat naturally carried a goodly amount of burrs and wild grass seed. Imagine the prospector's amazement when, on nearing the vicinity of the gas well, the seeds in the burro's coat suddenly sprouted, and in a few minutes the animal was completely hidden by a green mass of grass and weeds. Naturally, the frightened man headed for civilization as fast as he could travel!

By coincidence, an industrial engineer happened to be vacationing at the desert's edge, and witnessed the arrival of the unfortunate pair. Being by nature an unusually inquisitive man, he set out to solve the mystery of the walking haystack.

No sooner was the mystery solved than the question arose as to how this wondrous force of nature could be best put to use. The engineer pondered over his slide rule and his ouija board. The latter implement was just then replacing the ancient soothsayer's crystal ball as the best means of quickly solving paper mill problems. Surprisingly enough, the answer that came up was, "build a paper mill."

CHET T. BEALS, the Author of our Machine Tender Munchausen story.



So the paper mill was built near the edge of the desert, directly over one of these strange little rivers that rise from the sand, flow a bit, then sink out of sight. The entire flow diverted into the mill provided ample process water for the operation.

The timber supply was gathered in almost as simple a manner. A railway line was built out from the mill, terminating in a loop that entirely circled the gas well. Each morning a train was sent out consisting of several flat cars, a passenger car of loggers, and a tank car of water. On each flatcar was placed a few tree seeds which, on the long trip out, soon became covered with a layer of fertile desert dust. On approaching the well, the cars were sprayed with water, causing the seeds to sprout, and on the circuit of the well, the trees grew to immense sizes, depending, of course, on the speed with which the train made the loop. On the way home the loggers felled and cut the trees to length, so that the train arrived at the mill in the evening with each flat-car loaded with logs ready for the woodmill.

Never before or since has there been a mill blessed with such an unlimited supply of raw material. Not a cent was invested in timber lands and only a small amount in capital was necessary to develop the resources. This manner of producing timber was of value in other ways. Any special wood species could be grown at will to be used for specialized paper grades. It was necessary only to determine the wood needs each morning for the grades to be run the following day, then sprinkle the proper seeds on the flat cars.

## You Tell a Story!

From time to time *Pulp & Paper* publishes such "tall stories" as this one by its readers.

Just so the story has something to say about pulp or paper, it may be only remotely connected with the facts of life as they are seen and believed by most of us.

Try your hand at it. Send your story to The Editor, *PULP & PAPER*, 1791 Howard St., Chicago 26, Ill.

We are very happy to send \$5 to Chet Beals for this one. Mr. Beals is technical assistant to the paper mill superintendent, Crown Zellerbach Corp., Camas, Wash.

The research staff benefited also by this rapid method of growing trees. Naturally, they could have any specie that they desired at their disposal for testing. It was necessary only to get the seeds and plant a tree or two. They also had opportunity to test the relative merits of summer and winter wood without the tedious job of separating annual rings. There were no annual rings, for after all, the trees grew in only a day. But there was summer and winter wood, also autumn and spring wood, depending on the season in which the tree was grown, also morning, noon and evening wood.

It is too bad that we haven't time to list the many specialty grades that were developed. One example was an orange wrapping tissue whose pulp was from orange wood grown in the early dawn of a spring morning. The sheet retained the natural scent of orange blossoms, and in addition to its primary use, was also very popular as a liner in boxes holding bridal bouquets.

Through excessive exploitation, the flow from the gas well gradually diminished, and the radio-active material that produced the magic Epsilon rays approached exhaustion. Also the uppermost very fertile layer of desert dust was gradually used up, leaving soil of only comparatively moderate richness. The trees grew more slowly all the time, until finally the train had to stay out over night. Soon afterward, the whole operation became uneconomical, and the mill was shut down.

In the years following, climate gradually changed, and man moved in with his irrigation ditches and farm machinery. Much of the area is still a desert wasteland, but the rest still has the richest agricultural land, and will grow the biggest of everything on the face of the earth. If you don't believe it, just ask any native Texan, and see what his answer will be.





A team of two American 375 Crawler Cranes loads up to 30 cars of pulpwood logs daily at a Georgia siding. One American 375 unloads a truck carrying 2¾ cords in two easy slingloads, while the other machine bumps the logs into place.

## TEAMWORK LOADS **30** CARS DAILY

Since mechanizing with two American Cranes, production has been increased 3,000 per cent daily at one Georgia loading area which feeds the St. Regis Paper Company mill in Jacksonville, Florida. The swift-moving team of American cranes means big savings in time and money over hand-loading operation.

Some 125 cars of logs a week are shipped from this siding to the St. Regis mill, although 175 cars can be loaded and shipped weekly, according to Griffith and Dyal, wood contractors of Mayport, Florida, who own the two American 375's. The pulp logs are trucked to the loading area from 222,000 acres leased by St. Regis near Colon and

Fargo, Georgia, and are transferred to the rail cars by the American Crawlers.

The American 375 Crawler Cranes, like other world-famous American products, have cut costs and upped production in America's leading industries and on America's biggest and toughest jobs. It'll pay you to find out about the advantages offered by efficient American 375 Crawler Cranes. Write or call your nearest American Distributor for complete, detailed information TODAY!

### American Hoist

American Hoist & Derrick Co.

St. Paul, Minn.

## Invents New Building Board Process

DR. JAMES D'A. CLARK, research and development engineer of Longview, Wash., and president of Sylvan Engineering Co., Chicago, and long active in pulp and paper industry activities, has invented a new dry process for manufacturing a building board.

Pack River Lumber Co. has already begun construction of a \$750,000 plant of 50 tons daily capacity to manufacture the new board. It will utilize sawmill slabs, edgings or left-over pieces.

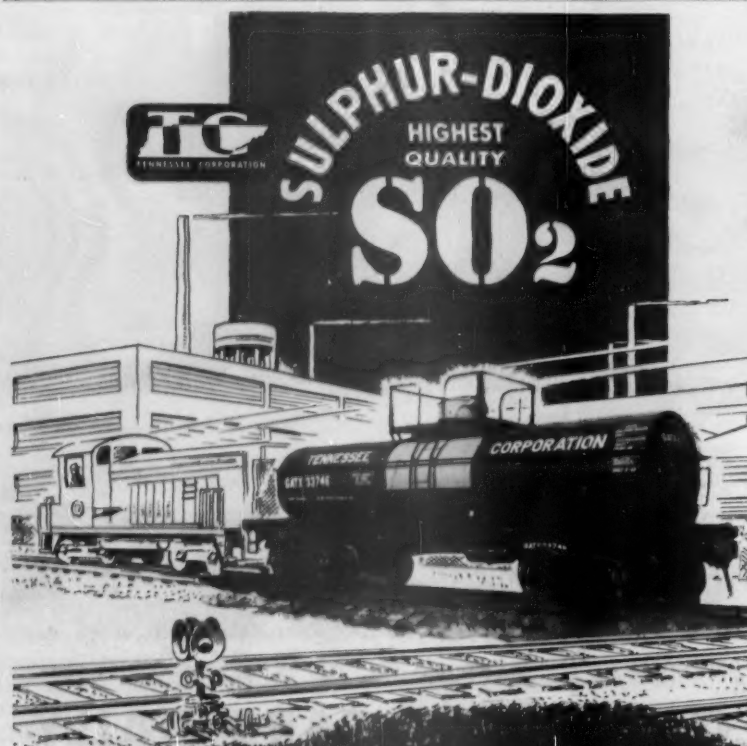
Dr. Clark told PULP & PAPER the board is a dense "multi-plywood" but

not requiring select logs. He said every bit of equipment is new and fully automatic, including a multi-opening press, with piston the size of the manufactured board—4 by 16 ft. Thickness of sheets will range from  $\frac{1}{8}$  to 6 in. The plant also has a small piston press to turn out 4 by 4 ft. samples.

A mat of wood wafers, about  $1\frac{1}{2}$  in. by 1 in.,  $\frac{3}{8}$  in. thick, will be mixed with resin and subjected to intense pressure and heat to form the board. It will use about 50% more of the wood in Idaho sawlogs.



WOOD WAFERS of different hues and resin make a new board in process invented by JAMES D'ARCY CLARK, shown holding a sample. Dr. Clark was with Army Quartermasters during World War II, and is widely known in pulp and paper circles.



### ... Side-Track To Successful Operations

Forward-looking industries have found Tennessee's highest quality Sulphur-Dioxide a sure side-track to successful operations. In so many cases, highly efficient and economical operations can be attained through the uses of this chemical (SO<sub>2</sub>) with its multi-purposed versatility. In preventing color reversions, and in washing out undesirable materials from the pulp, Sulphur-Dioxide replaces or supplements burner gas, thus increasing your efficiency and productivity.

Samples, Specifications and Detailed Information Available upon Request.

#### CONTAINERS—

- Cylinders
- Ton Drums
- Tank Trucks
- Tank Cars

TENNESSEE **TC** CORPORATION

617-629 Grant Building, Atlanta, Ga.

## New Machine for Norway

Hans A. Borresen, for three years in CZ Camas engineering department, and who made his first mill contacts in this country through PULP & PAPER, returns to Skien, Norway, in September to be assistant paper mill manager of Union Paper Co., Union Bruk, the largest mill of the second largest paper firm in that country.

According to Mr. Borresen, the firm plans adding a modern newsprint machine to operate in conjunction with its new groundwood mill already built. This will make a total of six machines at this mill. Mr. Borresen, previously affiliated with the Norwegian organization for five years, left in 1951 as plant engineer to work in the American industry.

JOSE DE LA MACORRA II, of Mexico's San Rafael Co., is on extensive trip to Europe.



## Macorra II in Europe

Jose de la Macorra II, son of the general manager of Cia. de las Fabricas de Papel de San Rafael y Anexas, S. A., Mexico's largest pulp and paper company, has been making an extensive trip in Europe. The younger Macorra is now an executive at the company's Papelera Nacional, newest of the San Rafael mills at Tlalnepantla.

**Improved Design Features  
of B&W Recovery Unit assure . . .**

# MAXIMUM EFFICIENCY

***in Chemical and Heat Recovery***

● **COMPLETE INSTRUMENTATION**

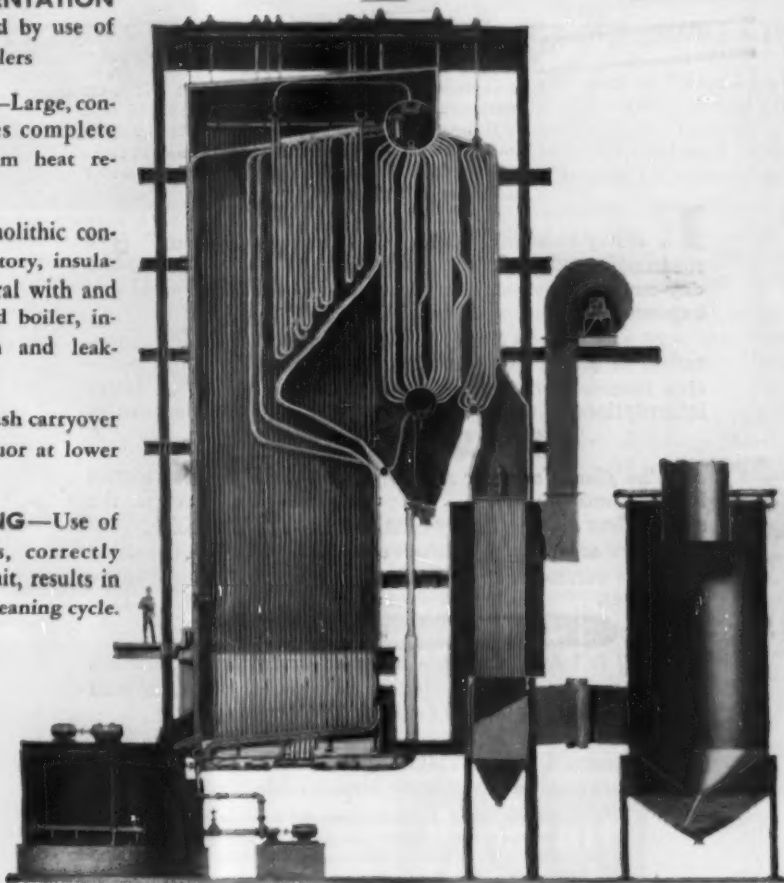
—Combustion is stabilized by use of automatic air-flow controllers

● **LOW FURNACE DUTY**—Large, conservative furnace assures complete combustion and maximum heat recovery

● **TIGHT SETTING**—Monolithic construction, in which refractory, insulation and casing are integral with and supported on furnace and boiler, insures uniform expansion and leak-proof setting

● **CLEAN BOILER**—Low ash carryover is the result of firing liquor at lower per cent solids

● **NO ROUTINE LANCING**—Use of improved soot blowers, correctly located in the recovery unit, results in a thorough and efficient cleaning cycle.



Typical modern B&W Two-Drum Recovery Unit  
equipped with B&W Cyclone Evaporator.



**BABCOCK  
& WILCOX**

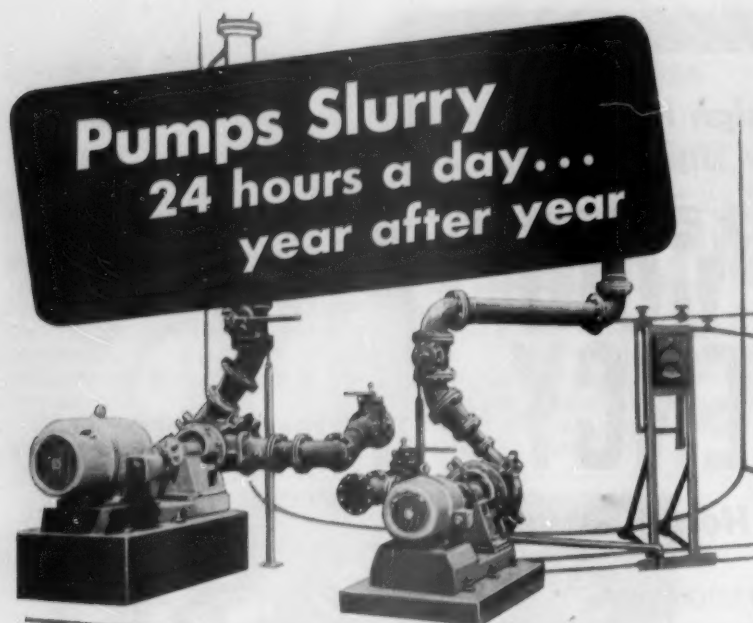
**THE BABCOCK & WILCOX COMPANY**

161 East 42nd Street

New York 17, N. Y.

P-780





● MORRIS TYPE R SLURRY PUMP at the left is on continuous 24-hr. duty delivering 1000 GPM of a 170" lime slurry at 100' head. Fifty-HP motor operates at 1180 RPM. Intermittent-duty pump at right delivers 200 GPM at 50' head with 7½-HP motor turning at 880 RPM.

**I**n slurry-handling operations, "long-term service" is a meaningless claim unless the pump will work day-in and day-out with a minimum of maintenance time, trouble and expense

Morris Type R Slurry Pumps—with an established reputation for longer life—also incorporate in their design exclusive features which result in easier installation . . . fewer interruptions to service...less overhaul...fewer replacements.

**To provide uninterrupted service . . .**

The gland is under suction pressure only. This reduces leakage and dilution . . . keeps harsh abrasives out of the stuffing box . . . practically eliminates packing troubles.

There are no internal studs or bolts. Caustic and corrosive solutions cannot seep past threads and cause maintenance headaches.

**To make installation and dismantling easy . . .**

Shell is interchangeable for right or left hand rotation. Suction and discharge nozzles can be rotated around the axis of the pump to a total of 72 different locations.

Impeller removed without disturbing the piping. You simply loosen 4 outside clamping bolts and pull off the end cover. This feature alone saves considerable time and labor.

● Free Service. Morris Engineers will be glad to recommend the pump best suited to your needs for size, capacity, etc. Send necessary data today . . . include request for Bulletin 181.

#### MORRIS MACHINE WORKS

Baldwinsville, N. Y.  
Sales Offices in Principal Cities



#### ST. REGIS MEN IN THE NEWS

LESTER J. SMITH (left), new Production Mgr. of Deferiet, N. Y., Mill of St. Regis Paper Co. He had been with St. Regis at Kalamazoo and Harrisville, N. Y., and formerly was Supt. at Combined Locks, Wis.

RICHARD PEETERS (right), Finishing Supt. for St. Regis at Kalamazoo, Mich., served as Chairman of the annual Summer Outing at Gull Lake, Mich., of Michigan Supts. Division. BILL HONEY, Price & Pierce, Kalamazoo, won the golf tournament with a 73.

#### Why Loftus Bought Appleton Machine Co.

Victor Bloomer, president of Appleton Machine Co., told PULP & PAPER there will be no change in management with its recent sale to Loftus Engineering Corp.

John M. MacDonald, chairman of Loftus, and president of MacDonald Brothers, Inc., management engineers, now is chairman of Appleton Machine.

Richard M. Radsch remains as vice pres. and gen. sales mgr., with H. L. Wendshuh, vice pres. and chief engineer Cecil Furminger, treas., and Harold Perlman, sec'y., of Loftus now hold those positions with Appleton Machine. Miss Carrie Morgan, whose father, John Morgan, helped found Appleton Machine, was secretary and is now retired.

#### Pacific Tappi Meet

Dr. Herbert F. Rance, research and development manager of Wiggins Teape Group Research Headquarters, Stone Wood Works, Aberdeenshire, Scotland, will conduct the annual seminar of Pacific Tappi, according to Coast Chairman E. H. Nunn.

Two sessions are to be held: September 27-28 in Seattle; September 30-October 1 in Portland.

#### Fan Mail Dept.

Editor  
Pulp & Paper  
Chicago, Ill.

Dear Sir:

I have just gone through your very fine American Box story in the June issue of PULP & PAPER. This is one of the most comprehensive presentations of a complete installation which we ever had the pleasure of reading.

Sincerely,  
(signed) LEROY A. CLARK  
Clark & Bobertz, Inc.



These Pennsalt Plants at Portland, Ore. (left) and Tacoma, Wash.



New Weyerhaeuser Timber Co. mill at Everett, Wash. Photo courtesy PULP & PAPER ... supply industry in the Northwest with basic chemicals ...



Bonneville Dam. Photo courtesy Bonneville Power Administration, Portland, Oregon ... made with the help of Hydro-Electric Power ...



... and utilize all types of bulk transportation to "deliver the goods"

## Helping to Build the Northwest

How Pennsalt, a basic chemical manufacturer has become an integral part of a great growing area

With two busy plants in the Northwest, at Tacoma and Portland, Pennsalt has long been an active, dedicated contributor to this region's development. Because of their location, these plants save nearby industry time, trouble, and expense in the buying of chemicals.

Many current Pennsalt products have been improved specifically to meet the needs of this area. For example, Pennsalt Sodium Chlorate is now helping to produce better, whiter pulp.

Handling methods, too, have been tailor-made to the Northwest: Pennsalt ships its products in drums, tank cars, tank trucks, barges—by whatever means best serves the customer.

The Company has also developed numerous basic chemicals and chemical specialties required by Northwest industries. For example, Pennsalt insecticides are widely used by apple growers.

Pennsalt's success is in no small way dependent on the region's vast resources. The Company extensively uses hydro-electric power, and the nearby ocean, through solar salt beds, provides an essential raw material.

And yet, with all its accomplishments, the Northwest is young. In coming years it will grow and prosper in a thousand ways. Pennsalt intends to contribute to that future in every way possible.

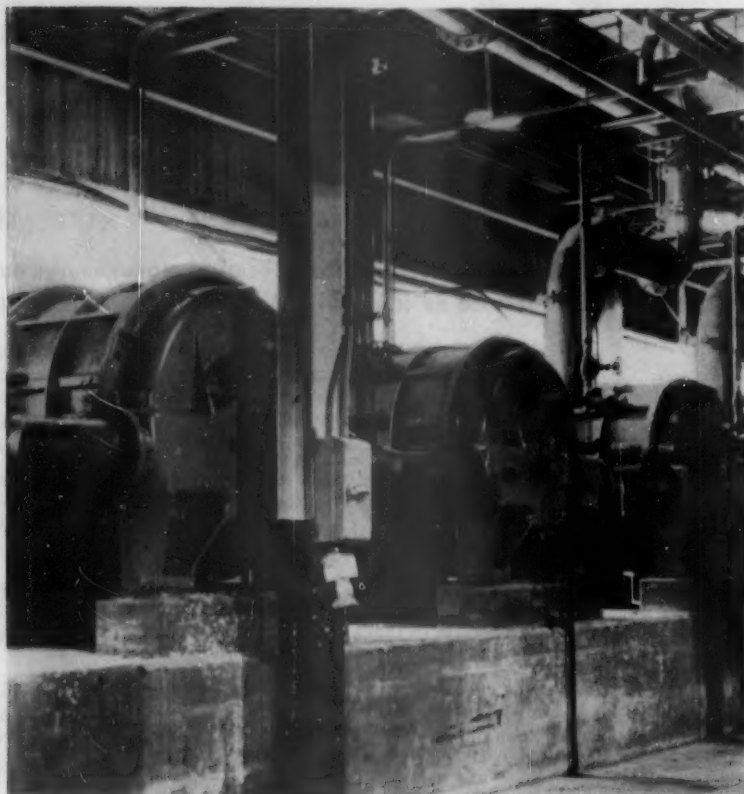


### DISTRICT OFFICES AND TELEPHONES

Berkeley 4, Calif.—Ashberry 3-2537 • Portland, Ore.—Atwater 7655  
Los Angeles 11, Calif.—Jefferson 6244 • Tacoma 1, Wash.—Market 9101

**PENNSYLVANIA SALT MANUFACTURING COMPANY OF WASHINGTON**  
2901 Taylor Way, Tacoma 1, Washington

# What, actually, do Vacuum Pumps on paper machines handle?



Paper mill engineers know that it is actually a mixture of air and water vapor, but the custom of rating vacuum pumps in terms of air capacity alone causes this important fact to be frequently overlooked.

The presence of this water vapor causes a considerable reduction of the effective air handling capacity of any vacuum pump except the Nash. In the Nash Vacuum Pump the bulk of this water vapor is effectively condensed, due to the Nash operating principle. The air handling capacity of the Nash is therefore not reduced.

That is one of the reasons why Nash Vacuum Pumps are standard in over a thousand leading Paper Mills.

## NASH ENGINEERING COMPANY

443 WILSON ROAD, SO. NORWALK, CONN.



### How A Trademark Is "Born"

How does a pulp and paper company, or any major industry, go about selecting a trademark?

This recently has been done by Kimberly-Clark Corp., and here's how it proceeded:

It was decided a new trademark was desirable—primarily to "sell" Kimberly-Clark Corp. An industrial design firm, Robert Sidney Dickens, Inc., Chicago, was engaged and was given general guidance by company executives, including those in sales promotion. The Dickens firm created over 100 different designs, of which seven were chosen as "avenues of approach to the solution."

These seven designs, with 135 studies that had been made, were turned over to K-C executives. Many discussions were held.

The new trademark symbol—shown above—was finally selected on this basis:

It was found to be simple, in good taste, and not in danger of becoming "dated." It was decided against any design that would specifically identify Kimberly-Clark as an industrial papermaker, or primarily a converter. Its product lines may broaden in the future. Association with pulp and paper can be achieved in the advertising program.



### LOTS A "STAFF OF LIFE" FOR THILMANY PAPERMAKERS

Here's a mountain of bread on desk of ART SCHMALZ, Production Mgr. at Thilmany Pulp & Paper Co., Kaukauna, Wis. A Green Bay, Wis., bakery uses a wrapper converted from paper made on Thilmany's No. 6 and supercalendered there. It is converted by Rapinwax Paper Co. Looks like No. 6 crew will be well-fed!



**THE MEAD SALES COMPANY**

230 PARK AVENUE, NEW YORK 17, N. Y.  
20 NORTH WACKER DRIVE, CHICAGO 6, ILL.



**DISTRIBUTORS OF WOOD PULP**

BLEACHED AND UNBLEACHED  
CHEMICAL AND MECHANICAL WOOD PULP



Paul Bunyan was so careful to prevent forest fires that whenever he wanted to smoke his pipe he would step over to one of the Great Lakes and stand in the middle of it while he lit up.

A reproduction of this incident from the fabulous life of Paul Bunyan—the seventy-eighth of a series—will be sent on request. It will contain no advertising.



### ALL OF IT IS SARAN-LINED

THIS IS BIGGEST vessel ever lined with Dow Chemical's Saran in Pacific Northwest, an 80-ft. chlorinating tower, 12 ft. diameter, built by Puget Sound Sheet Metal Works, Seattle, for Rayonier sulfite mill at Hoquiam, Wash. Weighing 18 tons, it was to be erected by two cranes. Puget Sound Sheet Metal constructed rear trailer mounting and front attachment, both fixed to steel bands around tank, eliminating need for trailer. At right end are Vice Pres. Gordon Anderson, left, and Gen. Supt. Mark Bank of Puget Sound Sheet Metal.



## teaching a wire to toe the line...

*It's model 706*, new Gilbert & Nash Hydra Guide with rotary palm\* for wire, wet felt, and dryer felt service. Shown in actual use—now in its second year—at Sorg Paper Company, Middletown, Ohio, #6 machine, Smith mill.

*High speed machines*—even variable speed machines—are no handicap to model 706. Its guide roll moves only in a *horizontal* plane to avoid undue wire stretch... continuously corrects at a plus or minus 1/64 inch... eliminates over-correction or hunting.

*Hydraulically operated* by water pressure—where filtered water pressure is 40 to 60 lbs.—or by oil pressure with a pump of one gallon per minute capacity. Send for free Hydra Guide folder or, at no obligation, write for a Gilbert & Nash representative to call at your mill.

# GILBERT and NASH

APPLETON, WISCONSIN

\* Manufactured and sold exclusively by The Appleton Machine Company

## EQUIPMENT and SUPPLY CO. NEWS

**JOHNS-MANVILLE** has issued the latest in a series of illustrated technical bulletins, "How Flange Surface Finishes Affect Gasket Sealability and Joint Performance." For copies write to J-M, 22 E. 40 St., N.Y. 16.

**MAGLINE, INC.** has a new series of magnesium dock boards equipped with a specially designed safety curb, which according to the company cannot be damaged by power truck wheel rims. For additional information, write Magline, Inc., 1900 Mercer St., Pinconning, Mich.

**BETA CORP.** has a new excess vibration protective device, Model 1 Vibration switch, which can be used on any rotating or vibrating machine, according to the company, to instantly shut down the machine or actuate a warning when vibration increases above normal.

**BABCOCK & WILCOX CO.'s** Tubular Products Div., has a data card which presents rupture data on 11 tubing steels used in high temperature service. Copies are available free by asking for TDC-153-A from the company at Beaver Falls, Pa.

**SAMUEL C. ROGERS & Co.** claims to be the first company to make actual working models of its own machinery, two exact replicas of Rogers grinding machines having been faithfully reproduced and displayed recently. Further information on the machines or the models may be obtained from the company, 191 Dutton Ave., Buffalo 11, N. Y.

**PERKINS-GOODWIN CO.** have moved their main office to 589 Fifth Ave., N.Y. 17.

**WARREN STEAM PUMP CO., INC.** has a four page, two color bulletin 247 on their Cradle Mounted Compacunits, types CLFC, CLC, CMC and CHC. It includes basic design and construction features, sectional and external views.

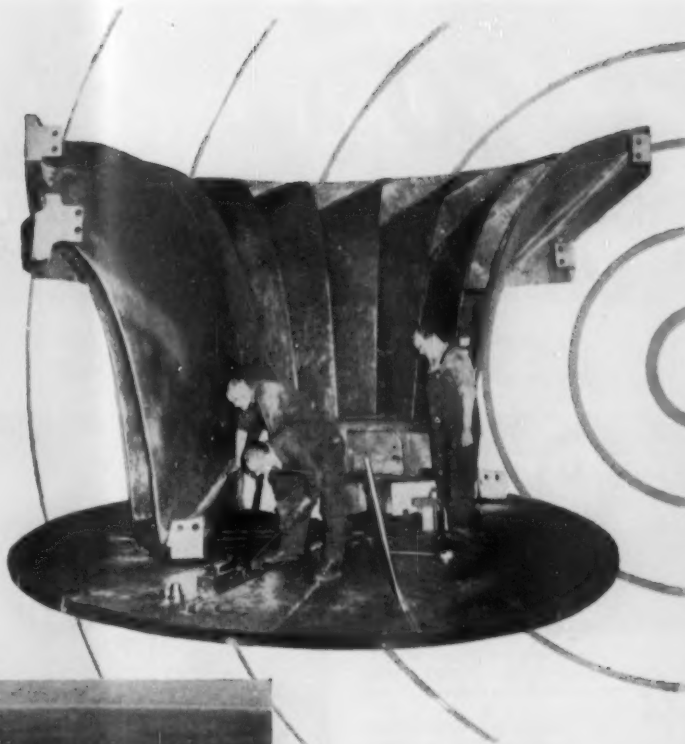
### NEW ALBANY PRESIDENT

**LEWIS R. PARKER** is new President of Albany Felt Co., succeeding **FREDERICK McDONALD**, who is now Vice Chairman. Mr. Parker, former Exec. V.P., is a Yale graduate.



OVER  
**1,000,000**  
HORSEPOWER  
DOMINION ENGINEERING'S

*Francis*  
**TURBINES**  
*at Beauharnois*



On the St. Lawrence River, between Lake St. Francis and Lake St. Louis, a fifteen mile long canal three-quarters of a mile wide feeds the Beauharnois Power Plant of the Quebec Hydro Electric Commission.

The site at Beauharnois is capable of developing over two million horsepower and plans for the St. Lawrence seaway call for using the power canal for ocean going ships.

Twenty Dominion Francis turbines at Beauharnois, fourteen rated at 53,000 H.P. and six rated at 55,000 H.P., are now delivering approximately 6,000,000,000 kilowatt hours per year.

As manufacturers of Hydraulic turbines — Francis, Propeller and Impulse types — for over 30 years, we invite your inquiries. Write for Dominion Hydraulic Turbine Bulletin No. 201.

**DOMINION ENGINEERING**  
COMPANY LIMITED

MONTREAL, CANADA



CABLE: DOMWORKS



# ESCO

## VALVES AND FITTINGS CAST IN ALL CORROSION and HEAT RESISTANT ALLOYS

are designed to your  
specifications  
and  
your analyses...

You no longer need to let alloy problems or unusual shapes or sizes of fittings or valves limit the design of your piping systems.

ESCO can supply you with fittings and valves cast in all standard, or specially modified, corrosion and heat resistant alloys in wall section and dimensions to meet your most exacting requirements.

ESCO Alloy 45, with full 3% molybdenum content for digester circulating systems for sulfite mills (acid base liquors); ESCO Alloy 40, for digester circulating systems for sulfate mills (alkaline base liquors); Alloy 20 and Hastelloy Alloys B & C, for other more severe corrosive conditions, are just a few examples of alloy availability. Monel, Inconel, pure nickel, Ni-Resist, 18-8 grades with .03 max. carbon and others are also available.

You get fast delivery—even on small quantities. No waiting for long runs of standard production items to be completed before your job can be started. Big orders can be handled efficiently and economically, too.

ESCO also offers you centrifugally-cast Spuncast® pipe, all types of flanges, screwed fittings and flanged fittings cast specifically to meet your needs and analyses.

Complete engineering and metallurgical service is available when needed. Ask for details or write for free booklets "How to Cut Costs With ESCO Spuncast"... "ESCO Cast High Alloy Welding Fittings"... "ESCO Stainless and High Alloy Products for the Process Industries."



...the toughest  
corrosion problems  
wind up at...



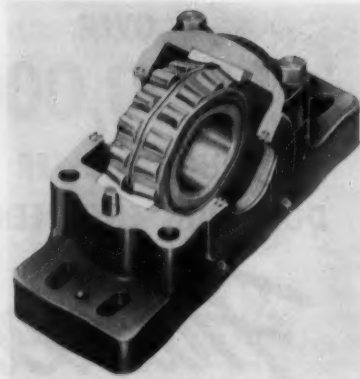
### ELECTRIC STEEL FOUNDRY CO.

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In Canada, Vancouver,  
British Columbia and  
Toronto, Ontario



#### NEW MILL BEARINGS

LINK-BELT Co. has augmented its line of Mill Bearings to include pillow blocks with heavy-duty self-aligning roller bearings for press fit on shafts. The new series (LPK7800F) bearings have steel split housings and extremely rugged caps and bases secured with extra-heavy bolts and large dowels.

DOWNTOWN MFG. CO. has a new eight page bulletin, "Pulping Phase of the DOWNTOWN Stock Preparation System." Illustrations with elevation and plain views of both batch and continuous type Fibrepulpers are shown. Ask for bulletin No. 454.

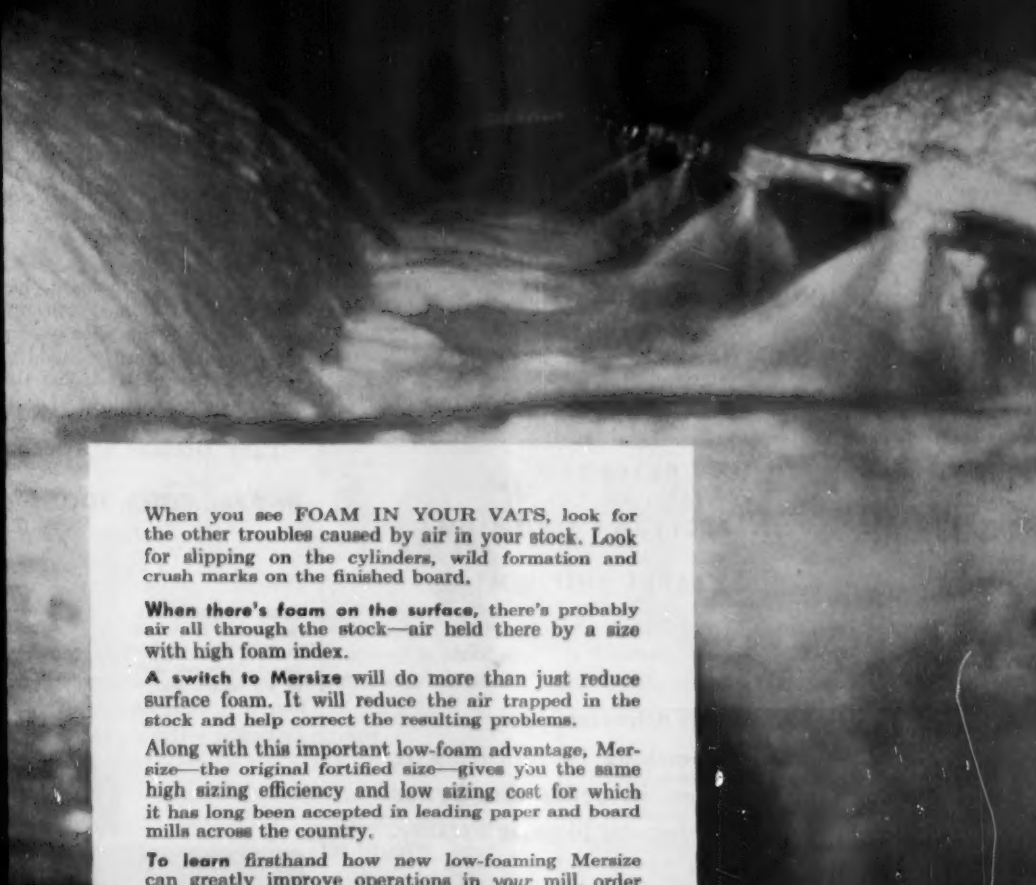
SPENCER CHEMICAL CO. has released "Ammonia," a 50-page book on technical aspects of handling, physical properties and allied topics. It contains 47 halftones and drawings and 17 charts and graphs, concerning both anhydrous and aqua ammonia. Producers interested in the ammonium bisulfite cooking process and others may write to the sales dept., Spencer Chemical Co., Kansas City, Mo., for copies.

LINK-BELT CO. has issued a new 340-page standard products Catalog 950, providing easy and rapid selection. Products shown fall into several major classifications, including chains and sprockets for conveying, elevating and power transmission. Tables of pre-engineered drives facilitate selection of standard roller chain drives and silent chain drives. The line of enclosed gear drives includes the newly developed parallel shaft helical drives in addition to herringbone, worm, and Electrofluid drives. For copies write to Link-Belt Co., 307 N. Michigan, Chicago 1, Ill.

SOLVAY PROCESS DIV., Allied Chemical & Dye Corp., has a new bulletin, "The Analysis of Liquid Chlorine and Bleach." Now in its third edition, the bulletin contains 72 pages of text, charts and indexes, and may be obtained by requesting Technical and Engineering Service Bulletin No. 12 from the company, 61 Broadway, New York 6, N.Y.

Monsanto  
Paper  
Chemicals:

## Mersize Reduces Foam on the Vat



When you see **FOAM IN YOUR VATS**, look for the other troubles caused by air in your stock. Look for slipping on the cylinders, wild formation and crush marks on the finished board.

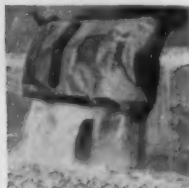
When there's **foam on the surface**, there's probably air all through the stock—air held there by a size with high foam index.

A switch to Mersize will do more than just reduce surface foam. It will reduce the air trapped in the stock and help correct the resulting problems.

Along with this important low-foam advantage, Mersize—the original fortified size—gives you the same high sizing efficiency and low sizing cost for which it has long been accepted in leading paper and board mills across the country.

To learn firsthand how new low-foaming Mersize can greatly improve operations in your mill, order a tank car for use under your own production conditions. MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, Box 478, St. Louis, Missouri.

Mersize: Reg. U.S. Pat. Off.



### New! Mersize RM Dry

#### ... Now Available

... completes the line of paste and dry fortified sizes offered by Monsanto, the originator of fortified sizes.



SERVING INDUSTRY  
WHICH SERVES MANKIND



## SOUTHERNERS IN NEWS BECAUSE OF NEW DUTIES

PULP & PAPER Editor, on flying tour of South in company plane, took pictures of members of Southern industry, several of them now in the news because of new duties:

CAPT. HERBERT A. KIDD (left) Vice Pres. of Rome Kraft Corp. and Macon Kraft Corp., was host at his Macon mill. Capt. Kidd has now moved to Rome, Ga., to oversee startup this Fall of the new Rome Kraft Corp. WILLIAM EBERSOLE (second) has been promoted to Prod. Mgr. at Macon Kraft. R. H. WORRELL (third) of Southland Paper Mills, who was visiting East Coast. SIDNEY R. BROWN, Jr. (fourth) has gone to St. Joe Paper Co. for important post as a production executive; and JAMES WHELAN (right) of Macon Kraft.

## News of Southerners on New Assignments

PULP & PAPER recently made an air tour of some Southern paper mills.

A collection of pictures of well known individuals at the "ports of call" are now very timely, because some of them are on new assignments or have been promoted.

SIDNEY R. BROWN, Jr., who made several legs of the flight, has been appointed to a new top operating position with the greatly expanded St. Joe mill. He was general superintendent at Big Island, Va., the NCC semi-chemical mill, where Cecil Curry moved up to replace him.

CAPT. HERBERT A. KIDD, now vice

## HE'S PROMOTED, TOO

CECIL B. CURRY, who has been promoted to Gen. Supt. at National Container mill at Big Island, Va.



## SHOW THEIR MILLS

PETER LEROY McCALL (left), in charge of operations at Seneca Products, was gracious host to PULP & PAPER visitor. OSBORNE A. MARROW (right), Pulp Supt., showed pulping operations at Riegel Carolina.

WIRE DRAWING • QUALITY CONTROL  
LOOM CONSTRUCTION AND MAINTENANCE  
ENGINEERING • WEAVING

RESEARCH  
INSPECTION • FINISHING  
CAREFUL SHIPMENT

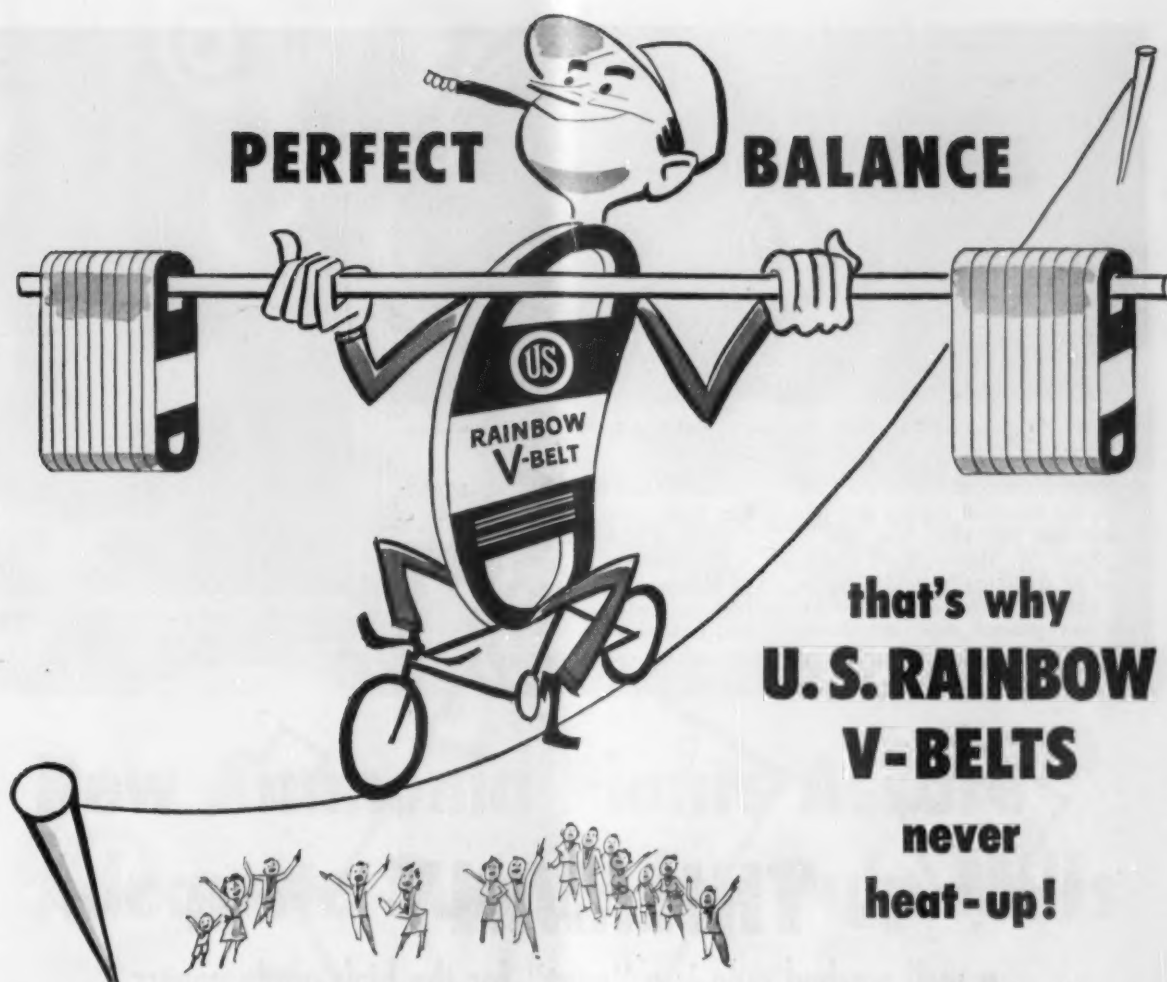
Each step is deliberately careful with a view to making Fourdrinier wire cloth better, in order that better paper may become likewise a reality.

THE LINDSAY WIRE WEAVING COMPANY  
Cleveland 10, Ohio



**LINDSAY WIRES** Since 1904  
FOR PAPER MANUFACTURING





**PERFECT BALANCE**

**that's why  
U. S. RAINBOW  
V-BELTS**

**never  
heat-up!**

The top rubber cushion in a U. S. Rainbow® V-Belt is in engineering *balance* with the lower cushion. This keeps the belt cool under constant stretch and return. That's one reason why U. S. Rainbow can work so steadily on the toughest drives.

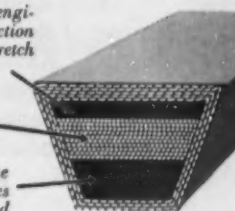
In every U. S. Rainbow the inherent stretch has been worked out beforehand in the factory, yet enough elasticity is retained to enable the V-belt to take the heaviest shock loads. The unique Equa-Tensil Cord Section—exclusive with "U. S."—insures sufficient *pull* and strength under a wide range of operating conditions. Straight sidewalls grip the grooves the full height of the belt, providing the complete contact which increases pulling power and eliminates slippage.

Order from your distributor, or get in touch with any of United States Rubber Company's 26 District Sales Offices, or write to address below.

*Top rubber cushion in closely engineered balance with the lower section ... to keep cool under constant stretch and return.*

*Equa-Tensil Cord Section— all cords scientifically placed, each pulling its share of the load.*

*A sturdy level cushion for the Equa-Tensil Cord Section provides structural firmness for V-grooves and over the flat pulley of V-to-flat drives.*



#### **A COMPLETE DRIVE SERVICE**

**MULTIPLE V-BELTS • F. H. P. V-BELTS • SHEAVES  
FLAT BELTS AND BELTING • SPECIAL PURPOSE BELTS**



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MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.**

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*"U. S. Research perfects it.  
"U. S." Production builds it.  
U. S. Industry depends on it.*

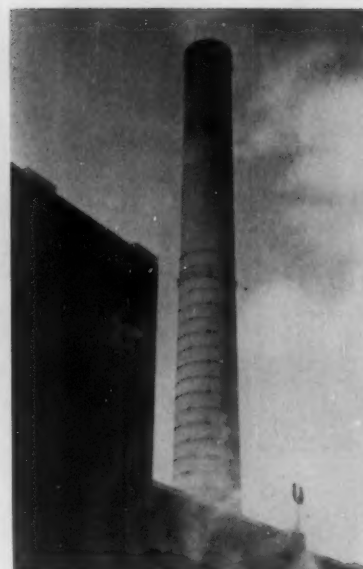


Just before the plane landed at Macon, Ga., here is what PULP & PAPER tourist saw—Macon Kraft Corp.

president and top man at Rome Kraft Corp., the new mill coming into production late this year, was host to the flyers at Macon Kraft Corp., where he continues to hold a similar top position. WILLIAM EBERSOLE, who was general supt. at Macon,

where he welcomed the air tourists, has been promoted to manager of production at that big mill.

PAT SHANNON, formerly paper supt. at Macon, went on to St. Joe and is now its production mgr. JOHN MARTIN, general products mgr. at Sonoco



At right, this stack alongside of precipitator at Macon Kraft mill is 300 ft. high.


**at THILMANY**  
 . . . a well washed pulp is a "must" for the high grade papers produced in this specialty mill!

Very clean pulp with low dilution is essential to low cost of operation at Thilmany Pulp and Paper Co., Kaukauna, Wisconsin. These requirements were *guaranteed* by SWENSON and subsequent operations disclosed better-than-guaranteed performance. Like Thilmany, why not discuss your pulp washing needs with SWENSON.

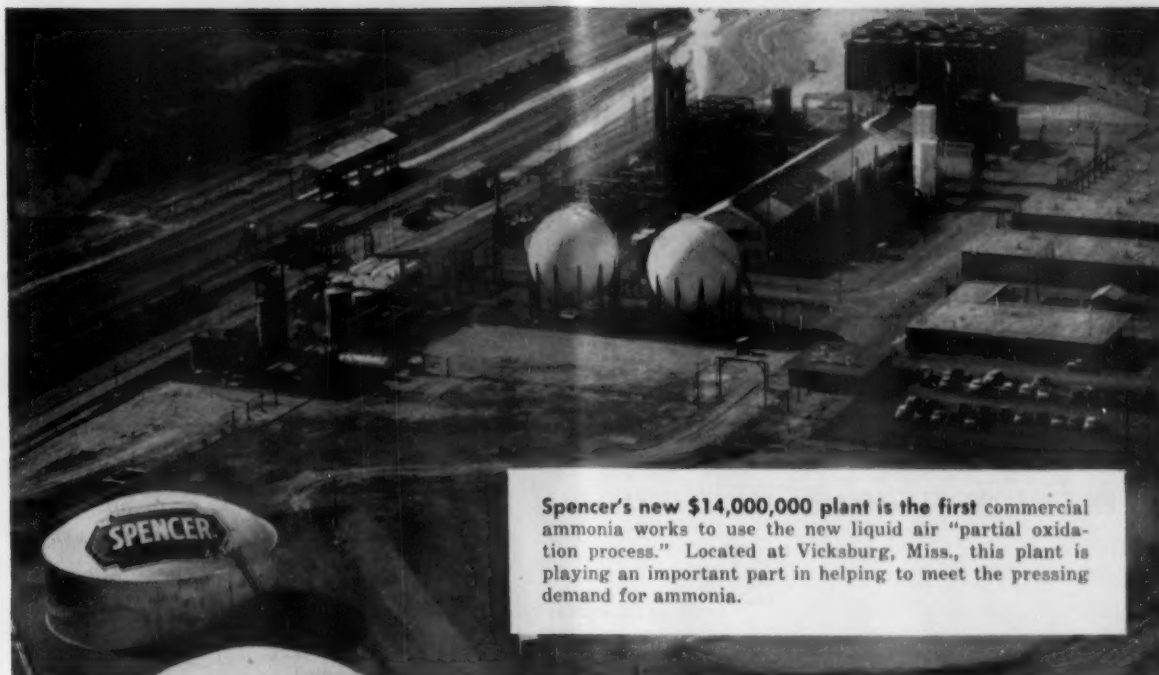
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 15632 Lathrop Avenue, Harvey, Illinois

**SWENSON**

Proved Engineering for the Process Industries  
 SINCE 1899



**Get The Complete Report!**  
 A 6-page paper recently issued gives the full Thilmany story. Write for a copy now!



Spencer's new \$14,000,000 plant is the first commercial ammonia works to use the new liquid air "partial oxidation process." Located at Vicksburg, Miss., this plant is playing an important part in helping to meet the pressing demand for ammonia.

## New Ammonia Plants Assure Adequate Supply for Pulp Mills

*You can now switch to ammonium bisulphite pulping with confidence*

**Lower costs and higher profits** often await pulp producers who switch to the ammonium bisulphite process. Also the greater ease with which ammonia waste liquors can be evaporated and burned helps solve the increasingly urgent disposal problem.

**Because operating conditions vary** widely, it is customary to make a test run before committing the plant to permanent operation on ammonia base. Yet even where tests have clearly shown the advantages of ammonium bisulphite, some have

hesitated to make the change because of the shortage of ammonia.

**Huge new factories**, like Spencer's \$14,000,000 plant at Vicksburg, Miss., however, mean that adequate and reliable ammonia supplies are now available. Perhaps you would like to consider the merits of the ammonium bisulphite process.

**If you have a question**, we'll be glad to hear from you. No charge or obligation, of course. Just write: Technical Service Station, Spencer Chemical Company, Kansas City 5, Mo.

**How ammonium bisulphite cuts costs, boosts profits:**

1. Shorter cooking time.
2. Lower cooking temperatures.
3. Higher yields of pulp.
4. Hardwoods can be pulped.
5. Operation cleaner and more uniform.



Spencer Chemical Company



America's growing name in chemicals



in Hartsville, S.C., is now a v.p.

At Macon, Capt. Kidd and his non-piratical crew greeted PULP & PAPER. There, the mammoth 216-in. Buccaneer, the Beloit kraft board machine, which had made day-tonnage productions, and is named for the papermaking skipper, was the cynosure. Too long from one end to the other, for voice communication, the remarkable machine has been described fully in the Apr. 1950 issue of PULP & PAPER. Also on view were two 42-in. Sutherlands which have been added making 14 now, with Electric Machinery drives, and two more steel digesters with Inconel inlets, making eight in all. These Chicago Bridge cone-

EDITOR of PULP & PAPER seems to be patting paper company plane which took him safely on tour of Southern mills. This is Lynchburg airport, short drive from Big Island, Va., mill.



*a better product and more of it*

*with the*

## CHEMI-PULPER® Continuous Digester

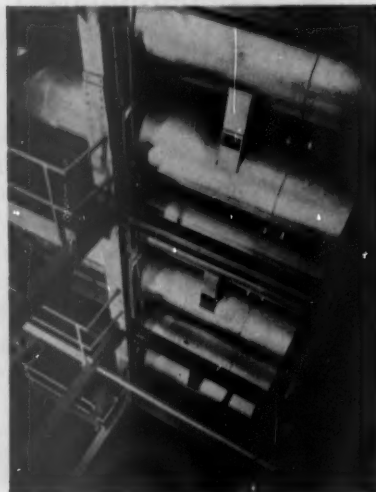
The Filer City Plant of the  
AMERICAN BOX BOARD COMPANY



"Worthless" forests of aspen woods near Filer City, Michigan, are now a valuable source of raw material for American Box Board's Filer City plant which will produce 120,000 tons of .009 paperboard corrugating medium per year now that their \$10,000,000 expansion and modernization program is completed.

Aspen, previously considered useless for conventional paper because of its extremely short fibers, is being converted into excellent pulp by CHEMI-PULPER Continuous Digesters at the Filer City plant. These digesters operate on an around-the-clock basis and supply pulp for the papermaking machines.

CHEMI-PULPER Continuous Digesters are operating in many prominent mills producing pulps for products from boards to bleach grades.



Write for Bulletin C3.



Manufactured and Sold in Canada by  
THE ALEXANDER FLECK LIMITED, OTTAWA, CANADA.

**PANDIA INC.**

122 EAST 42ND STREET • NEW YORK 17, N. Y.

tom digesters were first of their kind. The big machine's headbox has been rebuilt as a pressure headbox. The machine has made over 850 tons a day of board.

On view at Hartsville was the only neutral sulfite semi-chemical mill in the South—until Crossett's is finished. The Sonoco mill has likewise been described in PULP & PAPER. Of interest were the two sulfur burners which do not use induced draft and their combustion chambers and the absorption towers. Sonoco uses mostly gum, a little poplar. The flow is from Biggs rotary digesters to leach casters, Sprout-Waldrons for 800 freeness on primary refining, one Oliver stainless screen washer, Sprout Waldrons again for secondary, 700 freeness, and then to jordans and machines.

Great-grandfather Coker of the generation of Cokers now operating Sonoco was born on Society Hill overlooking this mill, and his son started the company in 1899. A diversion was a semi-chemical mill started up way back in the 1930's by Richard Coker, now part of the main company headed by James Coker, president, and Charles Coker, exec. v.p.

At Big Island, Va., a short drive from the Lynchburg airport, the Con-



### BIG ISLAND HOSTS

JOSEPH C. CLARK (left) of Big Island, came from Crossett research; ED ROGERS (right) used to be at Charleston, S. C., mill of West Virginia.

# best...

## for your long haul

But, what's best for the long haul is not necessarily best for the short haul...or medium.

How, then, to tell the exact pulp-wood, chip or waste-handling system that's right for you...the one best method that will deliver most efficient service at lowest possible cost.

There's where Chain Belt Conveyor Engineers fit right into your picture. Because Chain Belt Engineers frankly have no ax to grind. Chain Belt manufactures a complete line of pulp mill handling equipment. We can recommend without prejudice the conveying medium...chain, belt, or elevator...that you need.

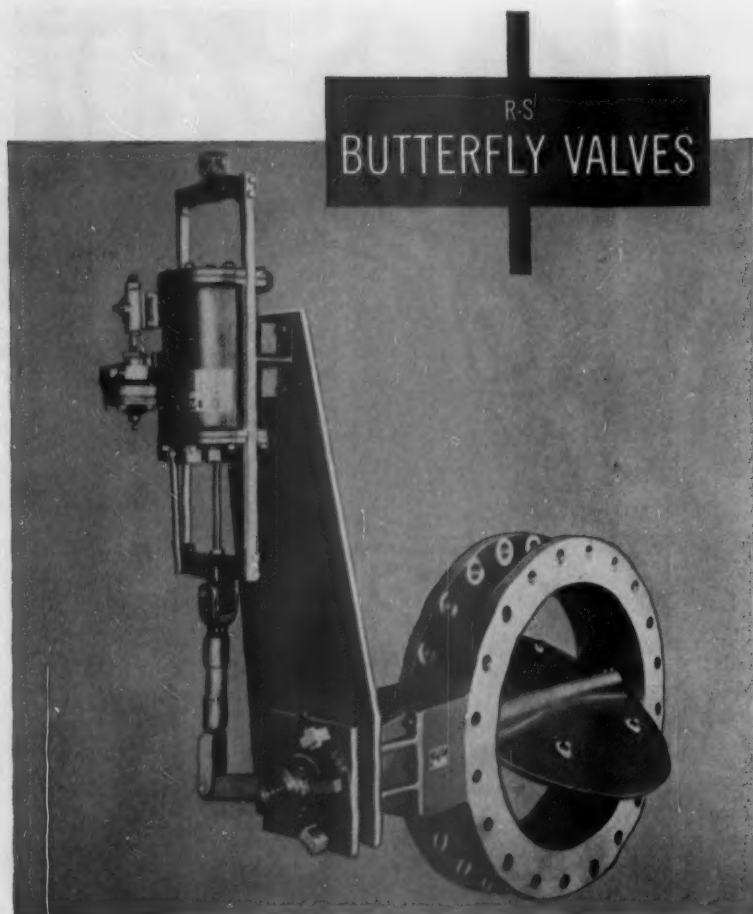
In this mill, Chain Belt Conveyor Engineers recommend Rex® Flat Belt Idlers to carry barked logs to the chippers. The framework to the right is the foundation of a new belt conveyor line that will handle pulp wood to the barkers. If the haul had been short, chances are they would have used a Rex Chain Conveyor.

Why not turn your handling problems over to Chain Belt Conveyor Engineers...to men whose only interest is in seeing that you get the best possible handling system for your particular needs. It's our creed and it's been profitable to us...and to you. Contact your local Chain Belt District Office or write Chain Belt Company, 4691 W. Greenfield Ave., Milwaukee 1, Wis.

# CHAIN BELT COMPANY

District Sales Offices and Distributors in all Principal Cities





## R-S VALVES FOR SENSITIVE CONTROL

These design features have won complete process control acceptance for R-S Butterfly Valves. In your processing system, an R-S Valve will give you every advantage in . . .

- ...complete control in all positions of normal regulating range
- ...fast regulation and control
- ...minimal pressure drop
- ...compactness and lightweight at less cost.

R-S Valves assure the most positive and dependable performance. They are available in any material that can be cast or welded.

The complete line of SMS valves — butterfly, cone and ball — are backed by over 75 years experience in hydraulic design and engineering. For full information on the proper valve for your process problems, check with our local representative or write S. Morgan Smith Company, York, Pa.

# SMS

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Hydraulic  
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Ship Propellers

tainer Corp. of Virginia operators were hospitable hosts. Here was quite a different semi-chemical process, a kraft variation. In the lush Virginia mountains, "creek wood" is the raw material, as they say at Big Island. It is 60% poplar, with considerable oak, too, maybe 10 to 15%. But ash, maple, gum, sycamore, even some hickory serves for this 9 pt. corrugated product. The flow includes Asplund Chemipulpers and Defibrators, cyclones, Sutherlands, used in series usually, and Impeco washers, the first one stainless.

### WOOD HEADS FOR BIG ISLAND

(Top picture) Paralleling the highway alongside Container Corp. mill at Big Island, Va. They use mostly poplar—called "creek wood" in Virginia mountains.

(Lower picture) Heading back to plane at Lynchburg, PULP & PAPER Editor saw this view of Big Island mill and stack in background.



### For a Famous University In Grenoble, France

Editor,  
PULP & PAPER.

Our American Library in Grenoble, France, is receiving regularly PULP & PAPER and I can assure you that it is greatly appreciated by our members.

Sincerely yours,

(Signed) HENRI JEGU

Vice Pres., American Library,  
U. of Grenoble.





**GET TOP  
CHIP QUALITY**

**... get the Top Knife  
for TOUGHNESS ...**

**SIMONDS T-18 CHIPPER KNIFE**

Your percentage of uniform chips that get through screening and into the cooker ... that's what determines profit or loss in your wood room. And with wood such a big factor in paper-making costs today...it doesn't pay to get less than the best in chipper knives.

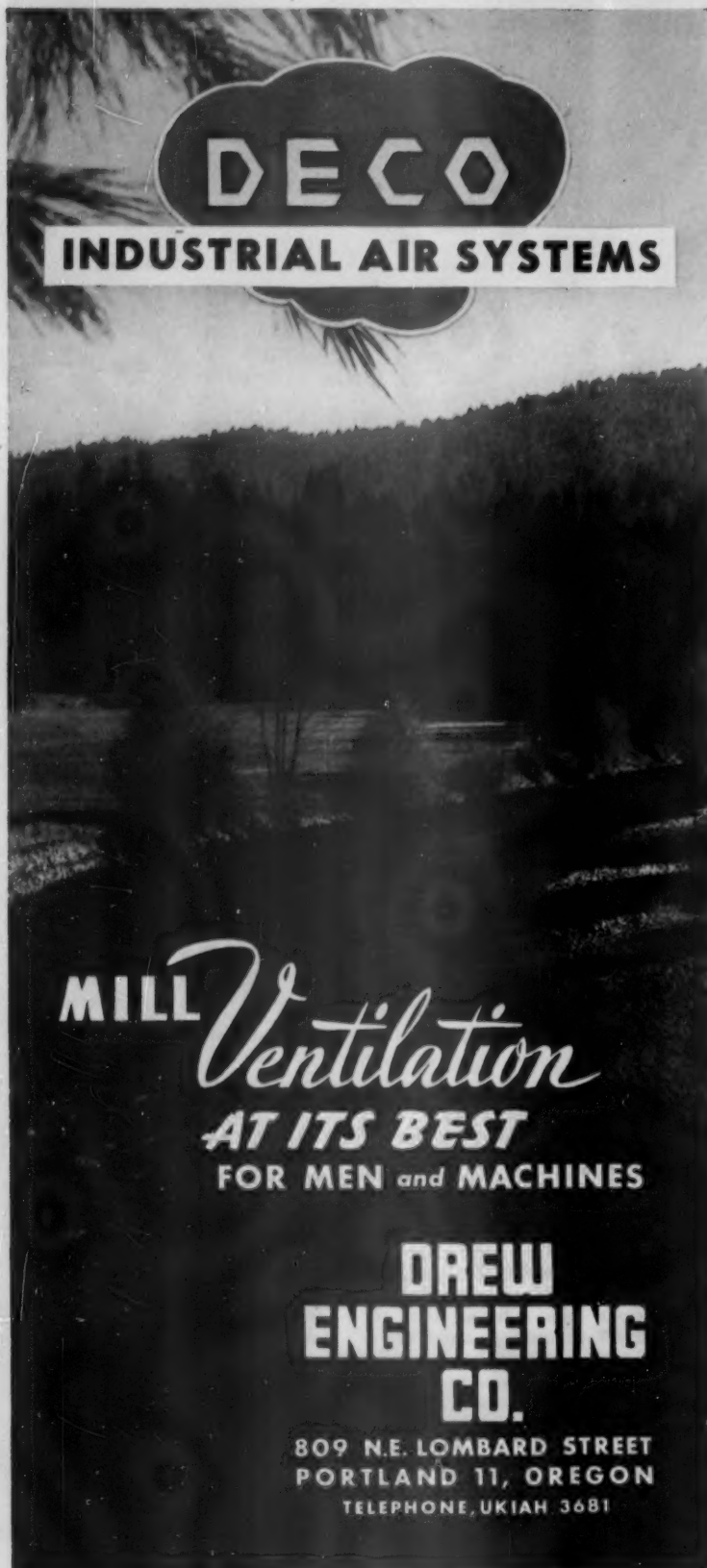
That's why you find Simonds T-18 Chipper Knives in modern, cost-conscious pulp mills all over the country. For these extra-tough knives hold their cutting edges far longer ... and consistently turn out clean-cut chips.

Slivers, sawdust and bruised chips are reduced to a minimum. Made of special Simonds T-18 Steel that's known for its ability to take the high speed, brutal beating of chipper operation, *Simonds Chipper Knives give you one of the most effective cost-control systems you can install in your mill. See your dealer today.*



Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon. Canadian Factory in Montreal, Que.  
Simonds Divisions: Simonds Steel Mill, Lockport, N. Y., Simonds Abrasive Co., Phila., Pa. and Arvida, Que., Canada

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**INDUSTRIAL AIR SYSTEMS**

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New Haug refiner, finding wide application in groundwood and other mills.

### Haug Refiner Finding Wide Applications

The Haug refiner is serving mills throughout the world and testimonials shown PULP & PAPER by Anton J. Haug, Nashua, N.H., endorse it over signatures of several executives of groundwood operations in Canada and U. S.

The Haug refiner may be called a centrifugal roller mill, he said. A number of rolls work over the stock or rejects with a definite pressure which is controlled through speed of the machine.

This refiner has found wide application particularly in groundwood mills, including mills making A-grade book and printing papers, because of the low power consumption and good quality of the refined stock which blends well with main stock and improves several of its characteristics. In Scandinavian countries many groundwood and kraft mills use Haug refiners, he said.

An Australian mill handling eucalyptus pulp advises that pre-treatment of the stock with the Haug refiner results in a greater final strength of the sheet.

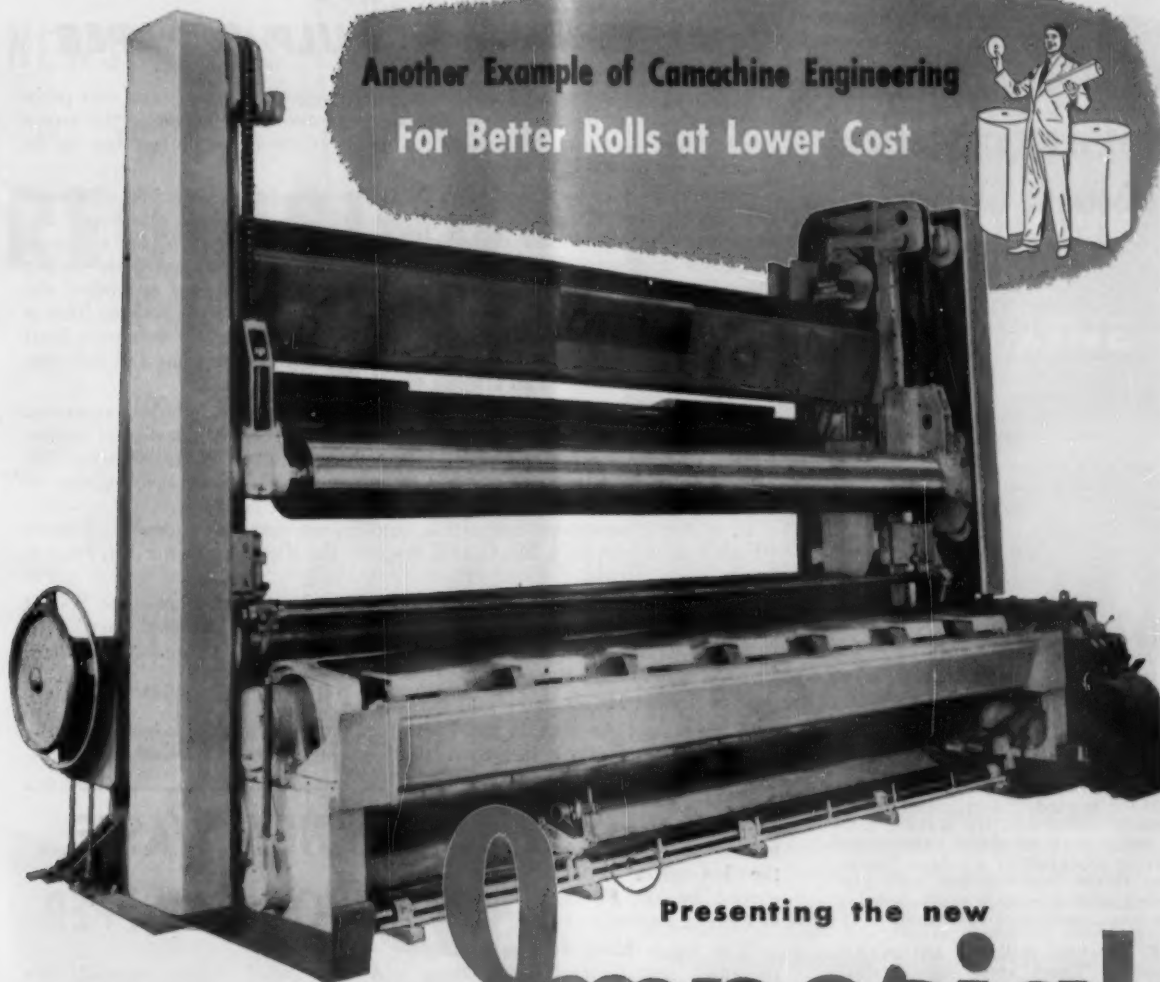
Write to Anton J. Haug, P.O. Box 526, Nashua, N.H., for further information.

### Ex-Mead Chief Retires

J. B. Gough, former chief engineer of The Mead Corp., whose experienced views on pulp and paper engineering problems have been expressed on pages of PULP & PAPER in past years, has retired. He was 17 years with Mead, lately as consultant, after ten years with Price Bros.

Born in Liverpool, Eng., Apr. 12, 1884, he arrived in Canada in 1908 to work as a draftsman for the Canadian Pacific. There he married a Liverpool kindergarten "sweetheart," former Ethel Mary Perrin. They have four children. Mr. and Mrs. Gough will live in Clearwater, Fla.

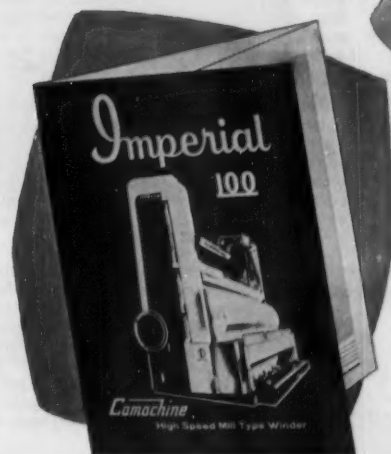
Another Example of Camachine Engineering  
For Better Rolls at Lower Cost



Presenting the new

# Imperial

HIGH SPEED MILL TYPE WINDER



In more than a year of actual service on important installations this great new Camachine high speed winder has surpassed expectations in every feature of design and performance. Camachine is proud to present the revolutionary new Imperial line of job-proved, ultramodern mill type winders, featuring hydraulic and pneumatic controls. Camachine Imperial 100 is rated at speeds up to 7000 fpm., with rewind capacity of either 42" or 72" diameter, and is built in widths to suit production requirements.

◀ This new, six-page illustrated folder, with complete specifications on the new Camachine Imperial 100, is now available. Please write on your company letterhead for your free copy.

AA-293

DON'T WIND UP WITH LESS THAN A **Camachine**

CAMERON MACHINE COMPANY • 61 POPLAR STREET • BROOKLYN 1, N. Y.



## Winding troubles?



## TIDLAND SHAFTS

### Dismantle like magic!

Are costly dismantling delays driving you crazy? Do shaft deflections slow down your winding to a walk and damage cores and papers?

Improved Tidland pneumatic shafts are the answer. Sixty mills in the U.S. and Canada have found these shafts pay for themselves quickly—often in a few weeks.

Shafts are expanded by inflating a heavy duty rubber inner tube. Release the air and *PRESTO!*—shafts come right out.



Tidland shafts come in two types:

1. *Leaf-type collapsible shafts* for surface rewind. Sturdy steel leaves expand uniformly. No screws, nuts or other parts to shake loose under terrific vibration of winders. Double seal thrust bearings are well protected with precision made housing for long, continuous operation.

2. *Lug-type mill roll shafts.* Air pressure forces steel lugs against full length of paper roll with a vise-like grip that ends slippage and shaft deflections. This permits higher operating speeds and stops damage to cores and paper. Lug-shafts require no chucks, sledge hammers or set screw wrenches. They're graduated in inches to speed up setting rolls of different lengths. Valve ends are threaded for pulling journal.

Both shafts are built of Shelby tubing of wall thicknesses to meet your individual specifications. Construction is simple and rigid.

Nearly 600 Tidland Shafts have been job-tested under every kind of operating condition, some for nearly 5 years. No Tidland Shaft has ever been rejected for workmanship or performance.

Write for folder and specification sheet. We'll quote by return mail. Ask for list of mills in your locality using Tidland Shafts.

## TIDLAND SHAFTS

Manufactured by Tidland Machine Co.

CAMAS, WASHINGTON

## Everett Digesters Verify Corrosion Cause Revealed in PULP & PAPER

ONE OF THE MOST IMPORTANT answers to the aggravating and high cost problem of corrosion in many kraft digesters—mysteriously increasing in recent years—was revealed by PULP & PAPER in an article especially written for its readers in the Dec. 1952 issue.

The article was by Francis W. Flynn, now assistant manager of Crown Zellerbach's Port Townsend, Wash., kraft mill. He explained, illustrated and evaluated a technical work done by himself and Babcock & Wilcox engineers at Crown Z's Camas, Wash., mill which supported a new "hot plate boiling theory"—presenting evidence that where liquor flow splashes or strikes the inside wall of digesters, corrosion often is started and is most serious. This is just one answer to a many-faceted problem, in which virtually the entire kraft pulp industries of the U. S. and Canada are devoting large sums and full time of many staff members in an attempt to solve.

In PULP & PAPER last month (Aug. issue), C. W. Cassell described expansion at Everett Pulp & Paper Co., where three new A. O. Smith digesters of carbon steel have been installed. These are of shell thickness of 1½ in., allowing 50% for corrosion. They were completely stress-relieved to reduce susceptibility to corrosion and possible caustic embrittlement of fatigue corrosion.

In a later comment on that article, and on corrosion experience at Everett (Wash.) up to July 1954, Mr. Cassell supports the theory expounded in PULP & PAPER's 1952 article.

He said that experience at Everett has "corroborated the hot plate boiling theory advanced by Mr. Flynn and the Babcock & Wilcox engineers." (Mr. Cassell was chief engineer at Everett; now is assistant to the president, Deerfield Glassine Co., Monroe Bridge, Mass.)

Here is what Mr. Cassell says:

"Carbon steel digesters in the Everett mill were originally selected for the modified soda process in use there until recently. After 15 months of operation on a mild kraft basis, a careful Audigage survey of shell thickness showed up a ¼ in. corrosion loss. The location of this corrosion corroborates the hot plate boiling theory advanced by Mr. Flynn in his article in PULP & PAPER.

"The liquor filling lines are being re-routed into external circulating piping to reduce this cause.

"'Pad corrosion' was found on the inside of the bottom covers of both digesters. This is a shiny rough-pocked surface directly over each of three of the six digester feet. The 'U' shaped corrosion outlines the foot weld, and as it had to originate on the outside, it might indicate fatigue corrosion due to vibration or expansion stresses.

"The three feet affected on each digester straddled the two large strainer-outlet pipes, suggesting possible vibration 'pivoted' about these pipes as an axis. Some vibration does occur on heating up each cook with direct steam. To combat this action, a skirt is being welded between the feet to distribute the digester weight more uniformly.

"A third identical digester, bought with the two originally installed, is now going in. This is equipped with an Electric Steel Foundry Co. external heater. All three digesters are getting Panzl relief strainers, also made by Esco."

## NEW WASTE WOOD CHIPPER

A waste wood chipper especially designed for sawmills who wish to make chips economically is offered in three disc sizes: 36", 42" and 48". Under normal operation these chippers can produce up to 15, 18 and 22 cords per hour respectively with low horsepower.

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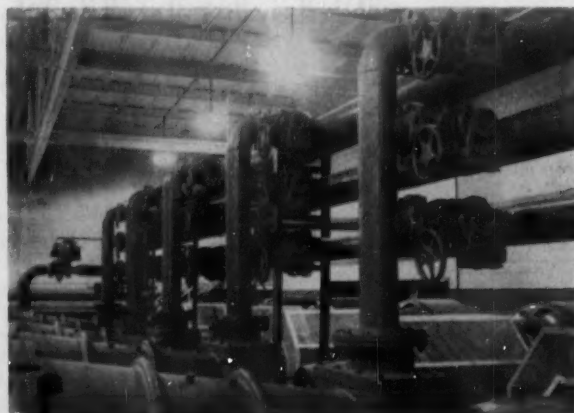
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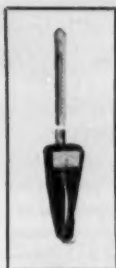
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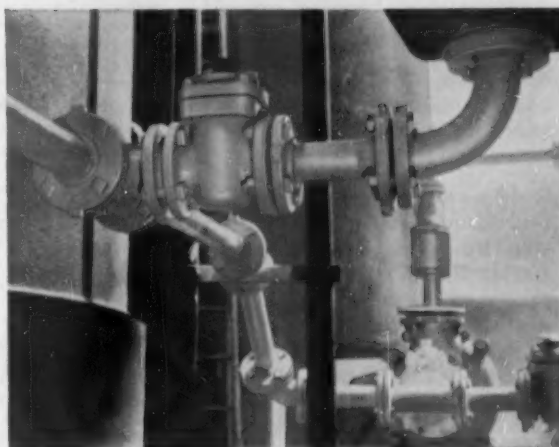
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PULP & PAPER — September 1954

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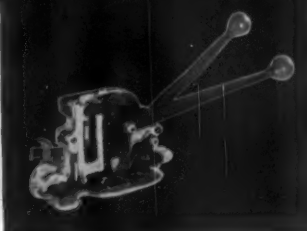
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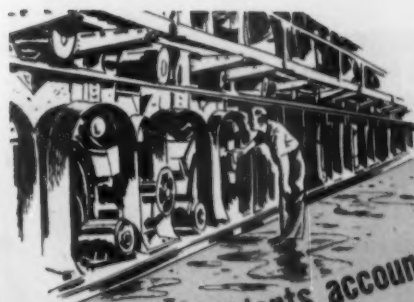
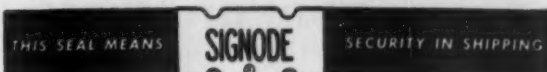
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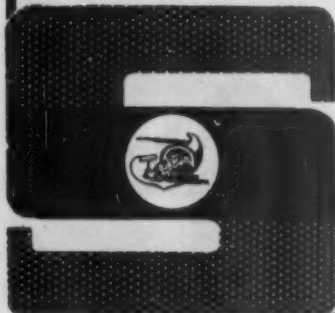
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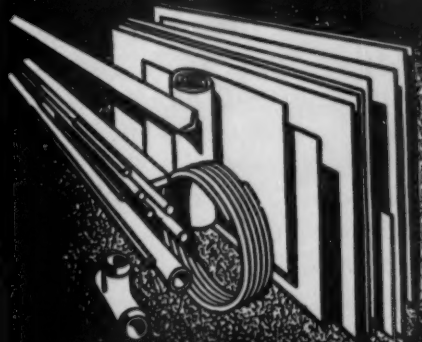
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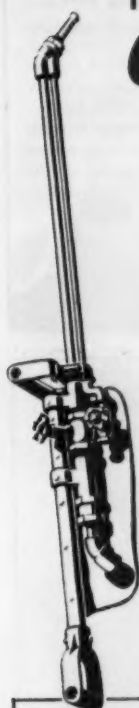
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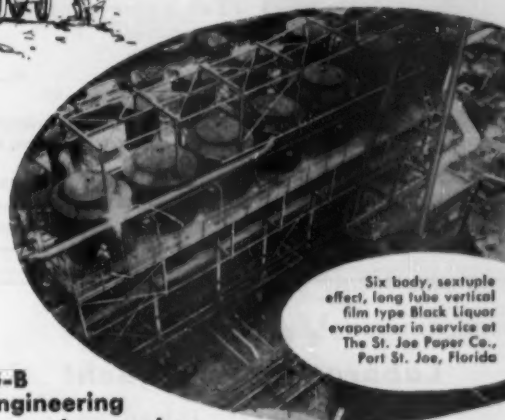
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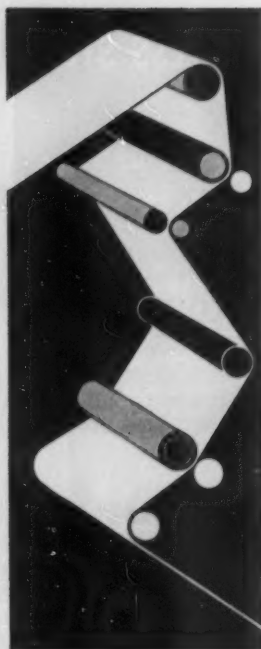
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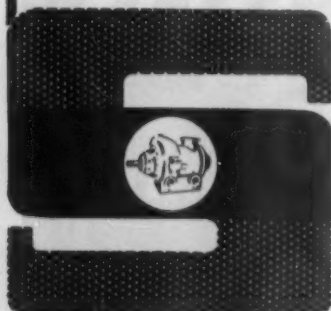
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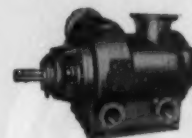
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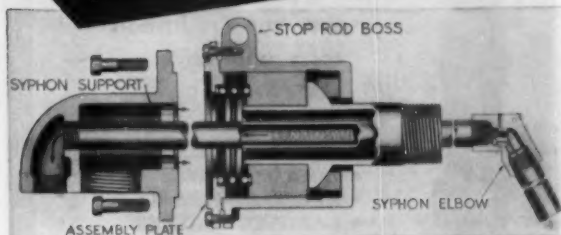


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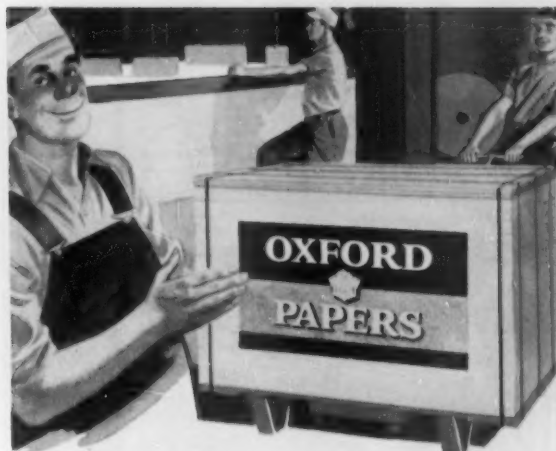
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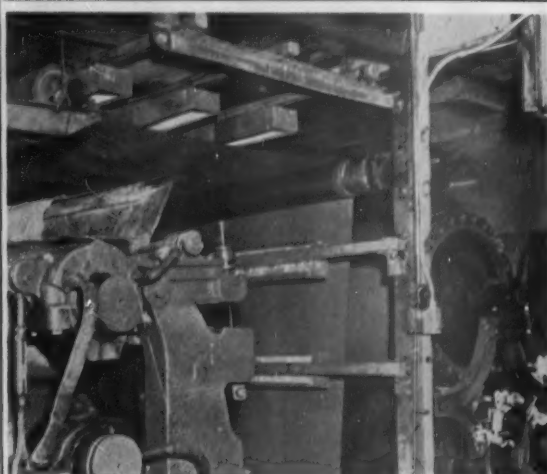
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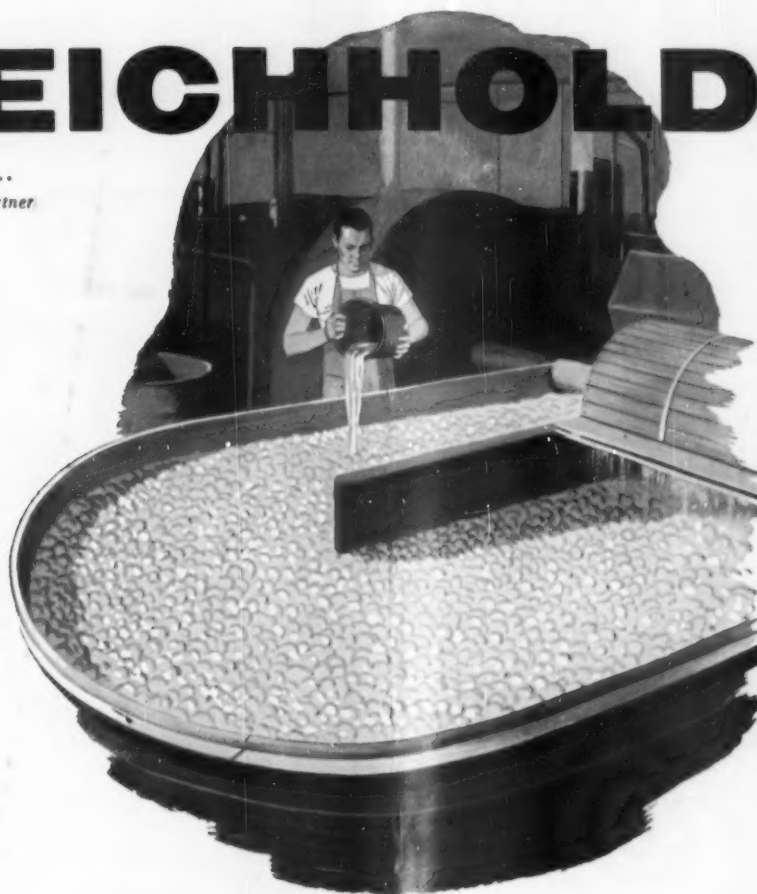
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